SHOAL CREEK VALLEY

Area Plan 19

PREPARED BY
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DEVELOPMENT DEPARTMENT

March 26, 1992

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SHOAL CREEK VALLEY AREA PLAN

City of Kansas City, Missouri

Approved by the
City Plan Commission

February 18, 1992

Approved by the
City Council

March 26, 1992

Resolution 920048

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INTRODUCTION

Purpose of the Plan

The adoption of an Area Plan is an opportunity for the City Plan Commission and City Council to establish public policy in response to growth in the Shoal Creek Valley area. Further, the plan offers a way for the participants to shape a vision for how the area could develop.

The Shoal Creek Valley area is predominantly rural in character, and agricultural in land use. The growth of urban land uses has occurred at the south edges of the study area near existing urban developments in Kansas City, North; and in the northeast portion of the area, where the Fishing River drainage basin is served with utilities. The City of Liberty also exerts an urban influence on the otherwise rural character of the study area.

The area has an extraordinary asset in I-435. The Area Plan is a chance to envision future urban development within the interstate corridor, and how it will relate to the larger study area. Numerous public and private plans must be considered. Public plans include the adopted Major Street Plan, the Hodge Park Master Plan and the Capital Improvement Program.

There are many elements of a city that influence growth. Some elements, such as freeways and main water-supply lines, can be projected 50 or more years into the future. Other elements, such as the incremental decisions of developers as they act upon and react to market conditions, can be influenced by planning. Identifying the most influential elements of growth within the Shoal Creek Valley area and planning for their effects is one important challenge of the Area Plan.

The Shoal Creek Valley Area Plan will give the City a context in which to review development proposals for the next several years. The plan analyzes expected trends and development over the near-term, defined as the next twenty to thirty years. In addition, the area plan envisions urban development in an ultimate built-out condition beyond the near-term. As development occurs in the near-term, the area plan will provide a planning framework, including goals with which the City may influence the quality, quantity and pattern of new land use. The plan will guide decisions by the City in the installation of bond sewers and water mains, and construction of arterial roads.

Study Area Location and Characterization

The Shoal Creek Valley Area Plan encompasses approximately 32 square miles of land north of Pleasant Valley Road to the City's corporate limit. The area is bounded by the City of Gladstone and North Woodland Road on the west; and on the east by Interstate 35 and the northeastern City corporate limit. The City of Liberty lies to the east, and unincorporated portions of rural Clay County lie to the north. Interstate 435 bisects the area; and Missouri Highway 291 traverses the area from I-35 on the east to the northwest corner of the study area. U. S. Highway 169 carries regional traffic beyond the western edge of the Shoal Creek Valley area, but certainly influences the area as it links with I-435.

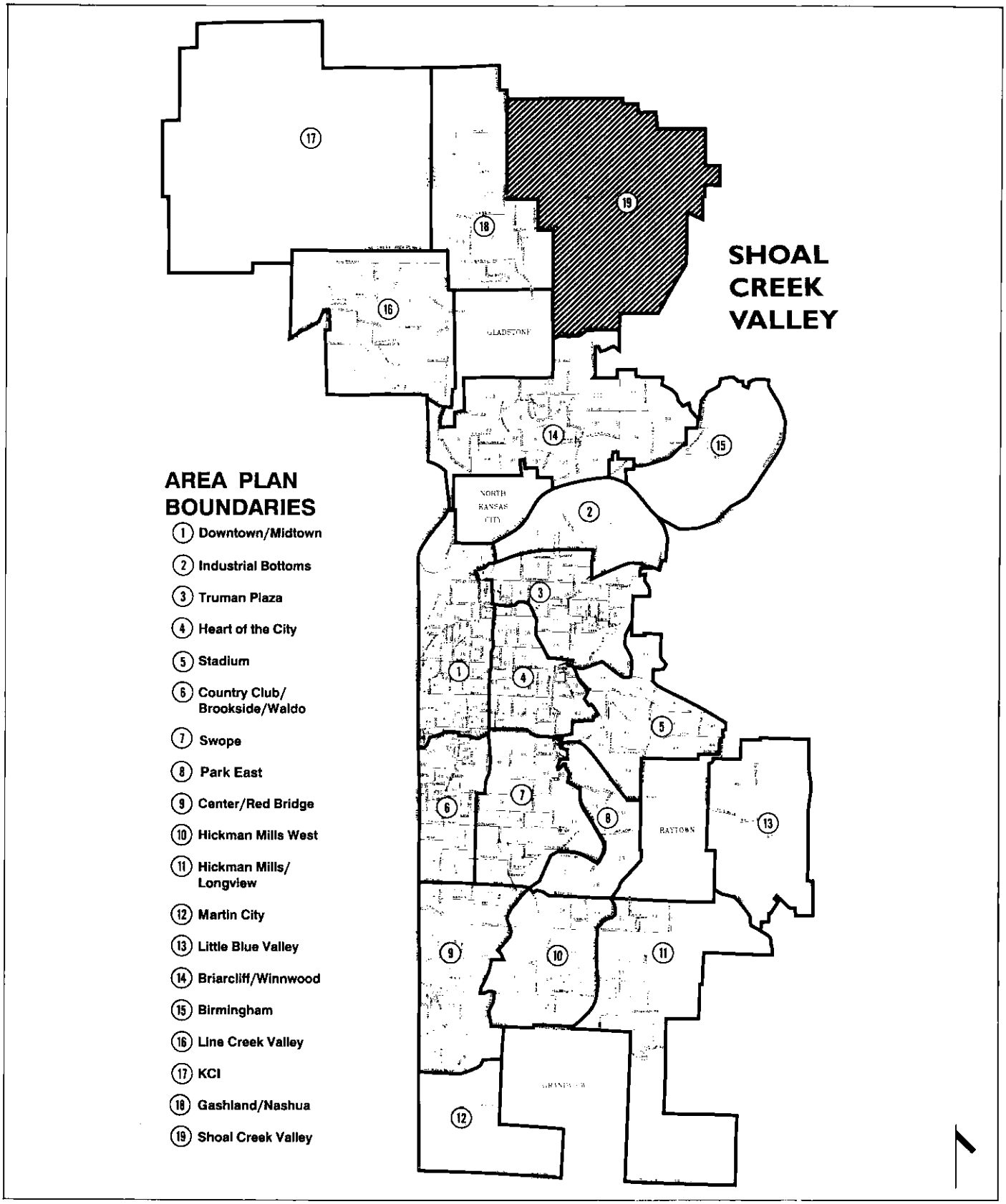
The area is close to shopping at the Metro North Shopping Mall and smaller community shopping centers in the northeast portion of the Northland. Maple Woods Community College and educational, retail and employment centers within the City of Liberty influence development within the Shoal Creek Valley area.

Large tracts throughout the study area remain agricultural today. Isolated growth within the Shoal Creek Valley area is occurring generally in three areas: a) west of I-435, particularly along Barry Road, b) south near Pleasant Valley Road and c) at the extreme northeast portion of the area, north of the M-291 corridor within the Fishing River drainage basin. Residential development in the plan area has emerged at a modest rate given the large land area under consideration. Approximately 180 new dwelling units have been built since 1980, of which the overwhelming majority are single-family houses. Two long-standing mobile home parks are in the northeast and north portions of the area. Commercial development has not yet occurred in the area, other than in isolated locations along I-35.

The existing population base is small relative to the size of the land area. According to projections for the near-term development of the study area (in the next 20-30 years), population will increase from about 1,200 people in 1980 to over 12,000 people in 2020.

AREA PLAN BOUNDARIES

Figure 1



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Relationship to the Comprehensive Plan

The Shoal Creek Valley Area Plan is being prepared through Kansas City's area planning process. Area Plans are one of two components in the City's Comprehensive Plan, which includes City-Wide Plans and Area-Specific Plans. All Area Plans emphasize five key elements:

1. Area Plans comprehensively review the effects of existing development and provide planning recommendations on how future development should occur.

2. Area Plans establish planning recommendations and a basic framework for more specific project plans. Area Plans highlight issues or projects that need a more detailed review, such as neighborhood stabilization program development or redevelopment projects for a commercial area.

3. Area Plans establish planning and urban design recommendations that City staff, the City Plan Commission, and the City Council can use to evaluate future development proposals.

4. Area Plans are published City policy documents that allow developers, neighborhood groups, and other interest groups to be cognizant of the City's priorities for economic development, rezoning, and conservation within the Area Plan boundaries.

5. Area Plans serve to coordinate the publication of information in City-Wide Plans such as the sewer, water, major street, and other public infrastructure plans. These plans help influence the direction of development.

Area-specific plans, in addition to Area Plans, include project plans, neighborhood plans, and site-specific plans. They provide solutions for specific issues that affect a small portion of the city and may provide specific proposals for implementation. Project and Neighborhood Plans encompass several types, including development plans, specific Neighborhood Plans, Urban Renewal Plans, and Corridor Plans.

Area Plan Methodology

The Shoal Creek Valley Area Plan is presented in two distinct time periods as the contexts in which the land use trends are analyzed: a) a discrete near-term period and b) a longer-term, indefinite period.

Near-term Period: a period of 20-30 years in which projections of population and land use development are made, and rates of absorption of growth are depicted graphically on the Systems Development Patterns Map and the Incremental Development Patterns Map.

Long-term Period: an indefinite period of time beyond 30 years during which development trends will spread to an ultimate built-out state, as depicted on a Future Land Use, Long-Term Low-to-moderate-density Ultimate Build-out Map.

Area Plan Goals

Summarized below are the goals developed in the Area Plan and presented in major sections of the report text. Each goal is presented with background discussion and an analysis of the context in which the issues are discussed. Finally, recommendations for achieving the objectives of the goal are presented in the report.

Goal — Preserve the natural beauty, environmental assets, vegetation and other natural amenities of the area by incorporating them into urban developments to help maintain an area identity within the Shoal Creek Valley area. (Page 15)

Goal — Expand upon Kansas City's existing system of parkways and boulevards with consideration to the newly proposed concept of the Kansas City Metropolitan Greenway System. (Page 32)

Goal — Establish the Shoal Creek Valley as an area where a range of residential land uses may develop in Kansas City, such as large estate residential, as well as more dense residential. (Page 51)

Goal — Near-term, low-density development (such as large-lot residential development) should be regulated so that it does not foreclose long-term, higher-density urban development. (Page 57)

Goal — In reviewing development proposals, such as in site plan reviews, the City should promote orderly retail commercial and office development which is compatible with residential land uses, blends with the natural beauty of the environment, and makes efficient use of the local and regional thoroughfare infrastructure. (Page 66)

Goal — Provide opportunities and guidelines for the development of light industrial land uses on appropriate sites in compatible locations relative to neighboring residential land uses and the natural environment. (Page 70)

PHYSICAL CHARACTERISTICS

Environmental Features

Topography

The land within the Shoal Creek Valley area is characterized by gently rolling hills conducive to farming and development of urban uses. Steep slopes in excess of 20% are found only in the basins which rise from the drainageways of the creeks running predominantly north and south through the area. The visual appearance of the Shoal Creek Valley area is characterized by open, gently rolling land with scattered wooded areas, especially along the drainageways. Steep slopes, drainage basin boundaries and flood plains are shown on the Environmental Features Map on the following page. The gently rolling farmland and limited areas of steep slopes makes the land conducive to future urban development.

Vegetation

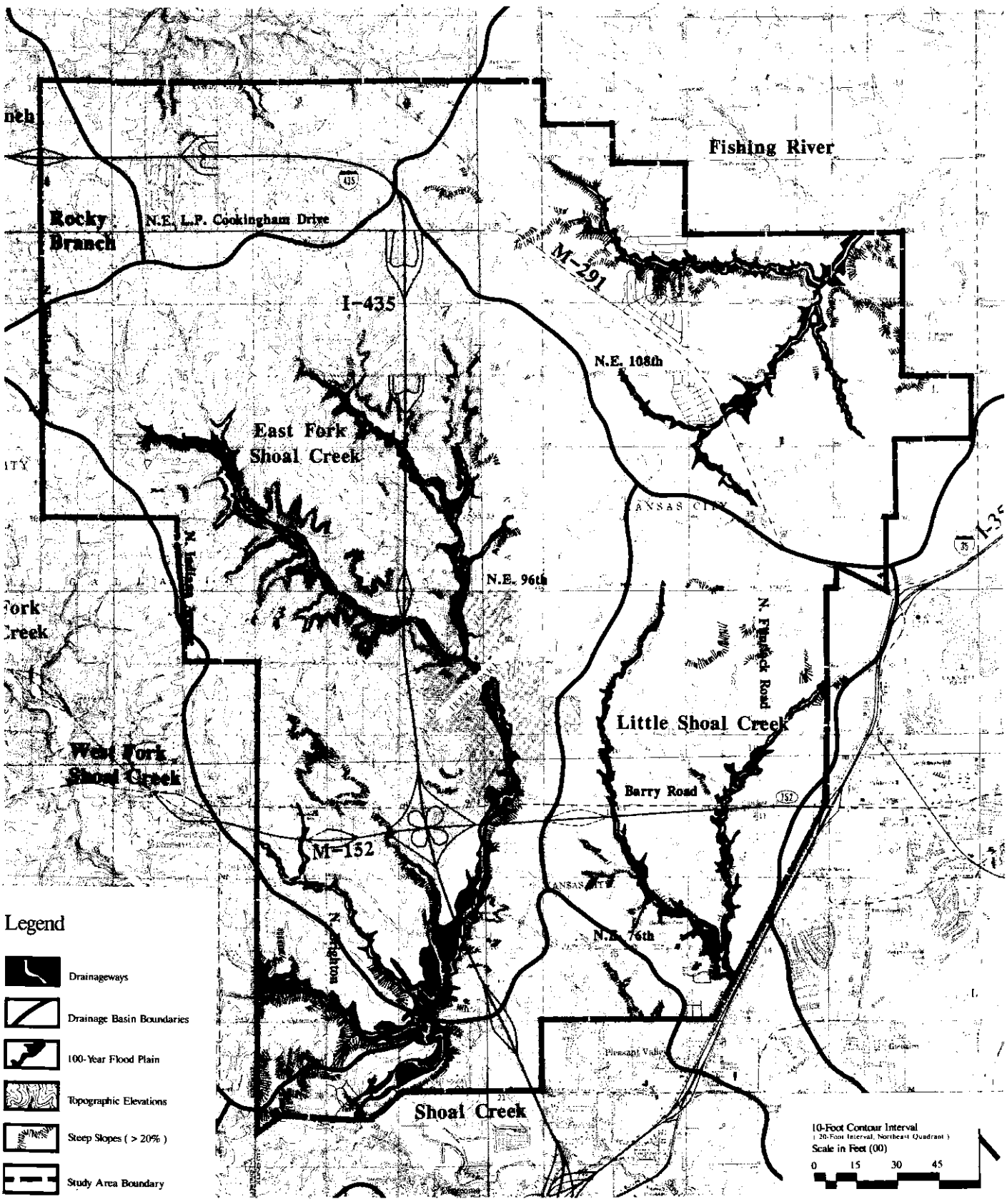
In examining the existing context of the area for clues as to appropriate planting decisions one finds a continuum of native, introduced and naturalized plant materials. This kind of a mixture is a result of the sequence of events which has occurred within ecological/botanical and cultural/historical contexts. Existing vegetation in the Shoal Creek Valley area is found within the following categories:

- Prairie grasslands;
- Woodland groves especially along creeks, creek branches, and rivers;
- Agricultural crop and pasture land; and
- Farm homestead shelterbelts, hedgerows and foundation planting.

The Shoal Creek Valley area is located within what was an important and dynamic presettlement botanical transition zone. A passage from Nature's Heartland: Native Plant Communities of the Great Plains describes this history.

ENVIRONMENTAL FEATURES

Figure 2



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Prior to agricultural development, the midwestern region was predominantly an Oak Savanna community. The savanna, a transition area between grassland and forest, has a park-like quality because of its mixture of grass and trees.

Before agricultural development, this transition area was a battle-ground between forest and prairie. The savanna could narrow or widen several hundred miles depending on which side was winning at any given time.

The prairie had a great ally in this battle with the forest; that ally was fire. In the spring, before new grasses covered the landscape with unburnable greenery, prairie fires ran rampant. Fire killed most woody plants while leaving the grass unharmed because their sustaining parts, their roots, were protected below ground.

The plant materials native to this community and likely to occur in the Shoal Creek Valley area are as follows:

Trees: Canopy (over 48')

Gleditsia triacanthos
Common Honeylocust
Juniperus virginiana
Eastern Redcedar
Quercus ellipsoidalis
Northern Pin Oak
Quercus macrocarpa
Bur Oak

Trees: Understory (12-48')

Crataegus mollis
Downy Hawthorn
Malus ioensis
Prairie Crabapple
Prunus americana
American Plum
Prunus virginiana
Common Chokecherry
Viburnum prunifolium
Blackhaw Viburnum

Shrubs: (6-12')

Cornus racemosa
Gray Dogwood
Corylus americana
American Filbert

Shrubs (less than 6')

Ribes missouriense
Missouri Gooseberry
Symphoricarpos occidentalis
Western Snowberry

Rhus glabra
Smooth Sumac

Symphoricarpos orbiculatus
Indiancurrant Coralberry

The existence of some plant materials in the area may indicate remnants of farm homesteads which warrant protection. As described in the same source as the above passage, this category of existing vegetation does not occur naturally, but is, nevertheless, an integral component of the existing landscape in the area.

> Much of the Midwest consists of gently rolling farmland with few trees to block the prevailing winter winds. Since these winds come from the northwest, windbreaks are planted on the north and west sides of farmsteads to break the force of the wind.
>
> An ideal windbreak consists of three or more rows of plants spaced 20 feet apart, with 12 to 18 feet between rows. Taller trees are placed in the center rows. Evergreens are usually used here because they hold their needles throughout the winter. Some sites, however, are not suitable for evergreens. In areas with heavy soils or poor drainage, broadleaf trees can be used in the center rows instead. Small trees and shrubs are used in the outer rows and at the ends of windbreaks. They are used primarily to maintain the desired density of the windbreak close to the ground.

Specific plant materials likely to occur in this pattern of vegetation are as follows:

Trees: Deciduous (over 48')

Catalpa speciosa
Northern Catalpa
Populus alba
White Poplar
Robina pseudoacacia
Black Locust

Trees: Understory (12-48')

Elaeagnus angustifolia
Russian Olive
Maclura pomifera
Osage Orange

Trees: Evergreen

Picea abies
Norway Spruce
Pinus bungeana
Lacebark Pine
Pinus nigra
Austrian Pine
Pinus sylvestris
Scotch Pine

An area of significant vegetation within the vicinity of the Shoal Creek Valley planning area is the Maple Woods Nature Preserve. This 38-acre area in Gladstone is protected as a Missouri Natural Area by the Missouri Department of Conservation. It represents a virgin, woodland plant community which is likely to have occurred, as well, in the planning area. This maple-linden community is unique in that it is found only on protected north and east facing slopes where there is sufficient moisture for these species to grow. An inventory of this area has been conducted by the Missouri Department of Conservation and has revealed the occurrence of the following species of vegetation:

Trees: Canopy
Acer saccharum
Sugar Maple
Quercus rubra
Red Oak
Quercus alba
White Oak
Tilia americana
Linden or Basswood

Understory:
Acer saccharum
Sugar Maple
Ostrya virginiana
Eastern Hop Hornbeam
Asimina triloba
Pawpaw
Putty Root Orchid
Showy Orchid
Rattlesnake Fern
Cut-leaf Grape Fern
(Rare Flora)

Planners and landscape architects, working with developers in the Shoal Creek Valley area, should consider the concept of "appropriate planting design" in making decisions regarding plant materials. This concept is emerging as an ecologically-based framework which influences choices about plant materials and planting designs. Appropriate planting design supports the existing living systems of plant materials. Indiginous plants, such as specific species of maple trees listed above, are most adaptive to the local environment and soils. Such plants should

be considered when making decisions about newly planted areas, areas of existing vegetation that warrant protection, or plantings which extend areas of existing vegetation.

Hydrology

The most prominent physical feature that defines the natural framework of the area is Shoal Creek, which runs from northwest to southeast across the planning area. The Environmental Features Map shows the pattern of drainage into Shoal Creek and its major tributaries that forms four watersheds:

- The *East Fork Shoal Creek basin* drains south along the I-435 corridor to the Shoal Creek basin, which drains to the Missouri River.
- To the east is the lesser drainage basin of *Little Shoal Creek*, which drains to the south, as well.
- The northeast corner of the study area drains northeast within the *Fishing River drainage basin.*
- The northwest corner of the area drains north to the *Rocky Branch Creek basin.*

The watershed land forms are defined by the ridge lines, steep and moderately sloping hills, upland and lowland meadows and woodlands, and stream corridors. Each stream corridor is further defined by its drainage channel, stream banks and flood plain areas.

The drainage basin boundaries and flood plains are mapped on the Environmental Features Map. Flood plains extend in narrow valleys of the drainage basins. Only in the southwest portions of the study area, west of I-435, does the 100-year floodplain profile widen and present impediments to urban development.

Geology and Soils

Bedrock in the subject area consists of cyclic deposits of limestone, shales and sandy shales of the Pedee, Lansing and Kansas City groups of the Pennsylvanian System. Much of the area was covered with a loess or glacial till mantle during the glacial eras. Soils found in the area were developed as a result of these events. Following is a brief summary of three (3) major soil associations as outlined in the "Soil Survey of Clay and Ray Counties, Missouri:"

Armster-Lagonda-Sharpsburg Association. Deep, gently sloping to moderately steep, moderately well drained and somewhat poorly drained soils formed in loess, pedisediments, and glacial till; on uplands. This association is suited to building site development and sanitary facilities. Wetness, slow permeability and a high shrink-swell potential are the major limitations.

Sharpsburg-Macksburg Association. Deep, gently sloping to strongly sloping, moderately well drained and somewhat poorly drained soils formed in loess; on uplands. This association is suited to building site development and sanitary facilities. A high shrink-swell potential, slope, moderately slow or slow permeability, and wetness are the major limitations.

Snead-Ladoga Association. Moderately deep, gently sloping to steep, moderately well drained soils formed in shale and limestone residuum or in loess; on uplands. The association is suited to building site development and sanitary facilities. Moderately slow or slow permeability, slope, a high shrink-swell potential, wetness, depth to bedrock, and stones are the major limitations to urban development..

The soils found in the study area are typical of soils found in the Kansas City, North area and are generally suited to building site development and sanitary facilities. Soil-related problems of a given development site should be probed through soil testing, and reviewed in the site plan approval process.

Archaeology and Historic Preservation

In Missouri, the recording of archaeological sites began in 1934 by a group of professionals throughout the state. The federal program for preservation of historic properties began in 1966 with the passage of the National Historic Preservation Act (NHPA). Section 106 of the NHPA directs federal agencies to take into account the effects of their actions on historic properties. The NHPA directs federal agencies to determine ways to avoid or reduce adverse effects on historic properties through coordination with the State Historic Preservation Officer (SHPO) and, at times, the Advisory Council on Historic Preservation, an independent federal agency. In terms of area development, Section 106 states that if federal funds are involved in a development project, an inventory and evaluation of cultural resources is required unless the SHPO determines it is unnecessary.

Missouri has two agencies which deal with historic preservation. The SHPO's office is within the Department of Natural Resources while the data base for known archaeological sites is within the Missouri Archaeological Society at the University of Missouri-Columbia.

The Missouri Archaeological Society provided information on recorded archaeological sites. This information is listed by section, township and range (see appendix). With regard to site coding, "23" is the designation for Missouri, "CL" is the designation for Clay County and the following number is the sequential number of recorded sites in the county, e.g., 23 CL105 is the 105th site recorded in Clay County, Missouri.

The Missouri Archaeological Society is just beginning (1991) to enter architectural sites on a computerized data base, similar to the inventory of archaeological sites. In most cases, the inventory of architectural sites originates with local organizations (Landmarks Commission in Kansas City) similar to the initial recording of archaeological sites in Missouri in the 1930's.

Kansas City has a city ordinance which addresses architectural resource protection (see appendix). The Landmarks Commission is in the process of drafting a similar ordinance for archaeological resource protection.

Clearly there is a trend toward increased regulation for the preservation of historic resources, both archaeological and architectural. The appendix to this report lists the most current information available. The state data base should be consulted when reviewing development proposals to ensure preservation of identified sites.

Recommendations -- Environmental Design Issues

Goal. **Preserve the natural beauty, environmental assets, vegetation and other natural amenities of the area by incorporating them into urban developments to help maintain an area identity within the Shoal Creek Valley area.**

Background. The topography of the area has planning implications. The gently rolling farmland and suburban estate land is conducive to future urban development. Few topographic constraints are present. The subtle natural beauty of the area presents a strong rural character and stark beauty.

Context. Development of urban uses has often proceeded without regard for natural beauty. Environmental features are often not considered by developers. Taking environmental design issues into consideration provides the opportunity to guide the physical development of this area of Kansas City in a way that will help it retain its visual character and elements of its stark beauty. The long-term application of planning design principles which are presented in the following recommendations will contribute to the quality of life for area residents. Implementing the design principles, through education and in site plan review by the City, will lead to quality in urban development. By promoting quality development, future developments will benefit from a stable development environment.

Recommendations

Conserve, protect and enhance areas of significant existing vegetation.

- Plant street trees through the City's Street Tree Program as soon after road construction as possible;

- Recommend to the Kansas City Board of Parks and Recreation Commissioners that they install large shade trees (over 40' in mature height) as street tree plantings spaced at the maximum of 50' on center;

- Publish lists of plant materials native to the oak savanna and the hardwood maple forest plant communities so that developers and homeowners will use appropriate trees in plantings (see existing vegetation listings); and

- Protect and preserve areas of existing vegetation within 30'-50' of major drainageways during development;

- Developing land as planned districts should be encouraged by the City because such development allows for more design flexibility and opportunities for environmentally sensitive development; and

- Planners and landscape architects, working with developers in the Shoal Creek Valley area, should consider the concept of "appropriate planting design" in making decisions regarding plant materials.

Protect environmentally sensitive and culturally unique areas.

- Development on steep slopes in excess of 20% should have landscaping and ground cover that will prevent erosion, including terraces where appropriate;

- Development in the 100-year flood plain should adhere to Federal Emergency Management Agency regulations;

- Use site plan review procedures to consolidate storm water retention/detention improvements among multiple developments, creating an area amenity; and

- Preserve and protect historically significant landmarks and sites.

Protect significant views.

- Review the location of multi-story buildings during the development approval process so that significant views of the Kansas City downtown skyline from selected high points along the future planned alignments of Shoal Creek and Maplewoods Parkways are preserved;

- Maintain open scenic vistas to the north of the rural landscape beyond the city limits from selected high points along the future planned alignments of Shoal Creek and Maplewoods Parkways;

- Plan for future scenic roadside pull-off areas in selected high points along future Shoal Creek and Maplewoods Parkway alignments;

- Where possible, preserve topographic high points for public access as development occurs; and

- Do not site multi-story buildings in areas where they could block significant views from within Hodge Park in order to maintain the natural setting created by the native animal preserve and historic village, Shoal Creek, Missouri (refer to Hodge Park Master Plan, Visual Character Map).

Public Utilities

Water

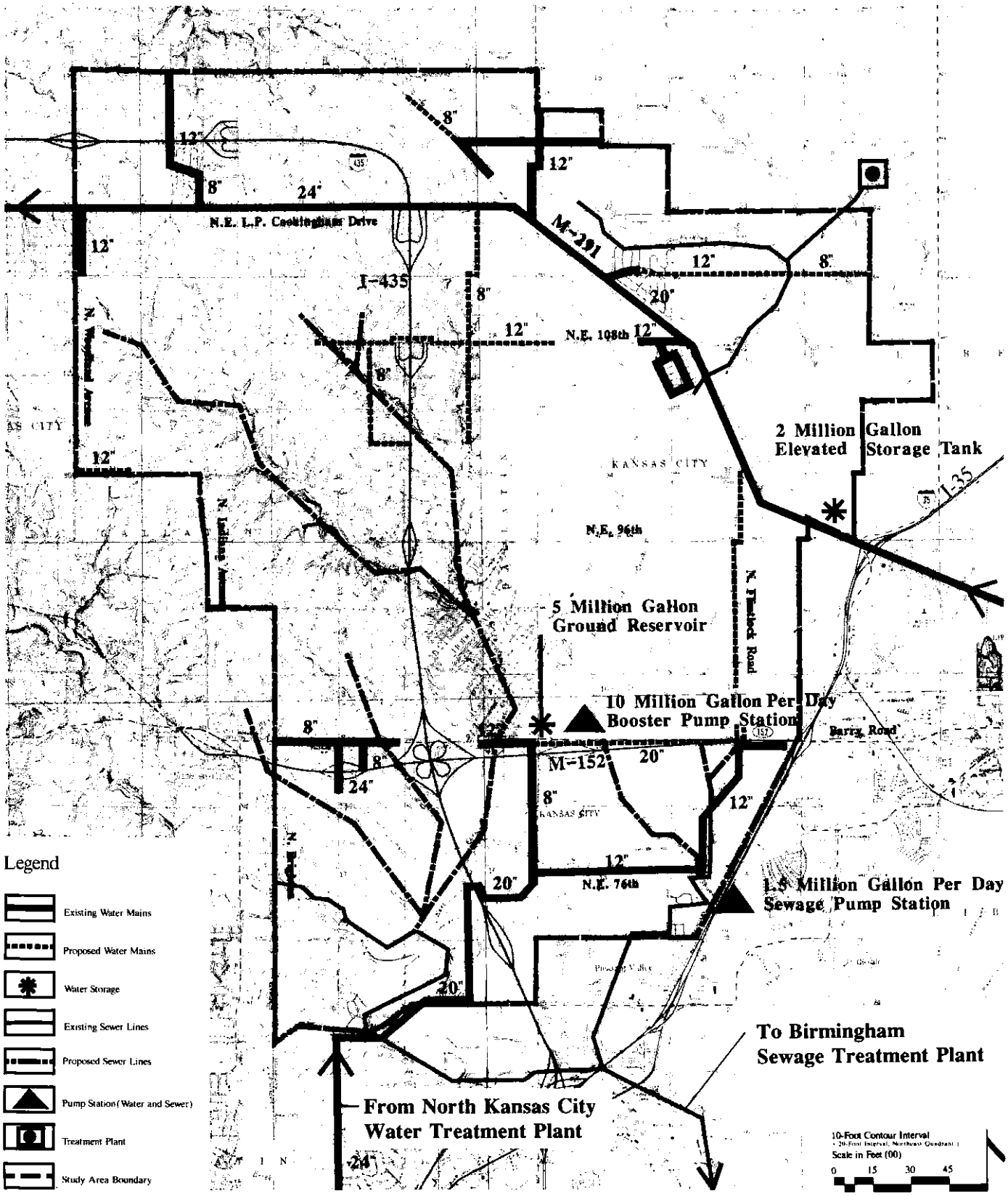
Generally the Shoal Creek Valley area is served by public water mains only at the extreme southwest, southeast, and northern portions of the study area, as shown on the Utility Services Map on the following page.

The Shoal Creek Valley area is served by two existing water transmission mains:

- From the south a 12" water main extends from N.E. 76th Street and along M-152 Highway. Extension of the line can serve development in the Little Shoal Creek basin, as well as portions of the East Fork Shoal Creek basin; and

UTILITY SERVICES

Figure 3



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- From the northwest a 24" water transmission main traverses east along L. P. Cookingham Road to M-291 Highway, then southeast in a 20" main to I-35 and the City of Liberty. The facility serves the northern portions of the East Fork Shoal Creek basin and the areas of the Rocky Branch and Fishing River basins which lie within this Area Plan boundary.

Several public 12" and 8" distribution mains have developed from the two feeder transmission mains to serve subdivisions and single residences. Currently the following areas have access to public water laterals:

- In the south portion of the study area at Barry Road and south along Reinking Road;

- In the northeast area along N. E. 108th Street west of M-291 Highway at the North Star mobile home park, at N. E. 112th Street east of the highway, and north of M-291 Highway; and

- North of Cookingham Drive serving the Northland Mobile Home Park at the northwest portion of the study area, then north of I-435.

The City has an adopted Capital Improvement Program which has established the following plans for future main transmission lines and interceptor improvements. These improvements, along with regional facility enhancements, will affect development in the Shoal Creek Valley area in the long-term future. They are not currently scheduled to begin on a specific date, unless otherwise noted.

Future Pump Stations and Reservoirs

Highway M-291 Elevated Tank - Construction of a 2 million gallon elevated storage tank at Missouri Highway M-291 and the east City limits.

Shoal Creek Drive Reservoir and Pump Station - Construction of a 5 million gallon ground reservoir and a 10 million gallon per day booster pump station at Shoal Creek Drive and N. E. Barry Road.

Future Water Transmission Mains

Shoal Creek Drive Main - Construction of approximately 7,000 linear feet of 20-inch diameter transmission main along Shoal Creek Drive from N. E. 74th Street and N. Winchester Avenue to N. E. Barry Road.

East Barry Road Main - Construction of approximately 8,100 linear feet of 20-inch diameter transmission main along N. E. Barry Road from Shoal Creek Drive to N. E. Flintlock Road (scheduled for 1995).

Flintlock Road Main - Construction of approximately 9,700 linear feet of 20-inch diameter transmission main along N. E. Flintlock Road from N. E. Barry Road to Missouri Highway 291.

The central portions of the Shoal Creek Valley area have no public water mains to supply water for domestic or fire fighting purposes. As stated in the Water and Pollution Control Department's Capital Improvement Program:

> Property owners in any such areas may petition the City to have water mains and fire hydrants constructed with all benefited property owners abutting the new mains paying their proportionate share of the cost by special assessments on a front foot basis. Deferred payment methods allow the property owners to spread the costs over a number of years. Special assessment projects of this type are financed by revenue bond funds. Such financing allows the mains and hydrants to be constructed immediately without placing a heavy financial burden on the affected property owners.

There are a few locations in the study area where property owners have petitioned for construction of adequately sized laterals off of existing water mains to serve development:

- East and west of I-435 in the north central portion of the study area along N.E. 108th Street, then south and north of 108th along N. Reinking Road, and south along N. Topping Road; and

- In the extreme northeast area in the Fishing River basin along N.E. 112th Street, west of M-291 Highway.

Sanitary Sewers

Only two areas of the Shoal Creek Valley area are served by sanitary sewers. As shown on the Utility Services Map, the study area is served by sanitary sewer mains extensively in the extreme northeast, where the Fishing River Treatment Plant opens up development along the M-291 corridor to the northern corporate limit. The plant is designed to serve 6,500 acres of development, 4,400 acres within the City of Kansas City. An estimated population of 68,000 persons in the Fishing River drainage basin could be served with primarily gravity-flow sewer into the treatment plant facility.

Two main interceptors currently serve basins of the Fishing River, and pump approximately 50,000 gallons per day (GPD) of effluent. At a design capacity of 1,000,000 GPD the plant is not fully utilized and has not been since its construction in the 1970's. The plant has room for expansion, as well.

The only other sanitary sewer interceptors in place at this time are at the extreme southeast and southwest ends of the study area at Pleasant Valley Road: one interceptor to serve future extensions up the East Fork Shoal Creek basin along the I-435 corridor; the other to serve the Little Shoal Creek basin east of Hodge Park. According to the City Water and Pollution Control Department, a series of temporary pump stations would have to be constructed to serve areas that develop incrementally within the Shoal Creek basins until the major trunk line interceptors are improved. These stations would pump effluent northeast to the Fishing River basin, or west into the West Fork Shoal Creek basin. Finally, at the extreme northwest of the study area, effluent may be pumped to the Rocky Branch basin treatment plant. Development along L.P. Cookingham Drive could be served in this manner.

Following are the sanitary sewer main projects identified in the current Capital Improvement Program (CIP) of the Water and Pollution Control Department for long-term future development, with no schedule for construction currently established:

Future Sewer Revenue Bond Projects

East Fork Shoal Creek Interceptor - Construction of approximately 15,100 linear feet of 30-inch diameter, 9,700 linear feet of 24-inch diameter, and 34,300 linear feet of 21-inch diameter interceptor sewers from the Shoal Creek Interceptor upstream to N. E. 108th Street.

Little Shoal Creek System - Construction of approximately 16,500 linear feet of interceptor sewers ranging in size from 10-inch diameter to 30-inch diameter and a 1.5 million gallon per day sewage pump station and 2,300 linear feet of 8-inch diameter force main.

By policy of the Water and Pollution Control Department, the "Bond Sewer" mains are extended only after "pioneer developers" in the area have taken out permits to begin constructing local sewer lines to serve their new subdivisions. Such development is not projected to occur east of Jackson Avenue in the East Fork Shoal Creek basin northwest of Hodge Park in the near-term time period of the next 20 years.

Development Constraints Based on Availability of Public Utilities

One purpose of the area plan is to influence future development in areas that can be cost effectively served with utilities. Development in this systematic manner is less costly to the City due to the fewer utilities requiring maintenance per number of area residents served.

The map on the following page shows where there is vacant, developable land in the Kansas City North and the Shoal Creek Valley area. Three development-sensitive criteria were selected to identify the areas most receptive to development:

- Existing Developments;
- Relationship to Existing Sewers; and
- Relationship to Existing Water Mains.

The light, unshaded areas on the map depict land which is vacant and served by municipal utilities. A tract of ground that is identified as less receptive to development is more than 3,000 feet from an existing water main and has no access to an interceptor sewer.

The map identifies only three areas that, by the criteria used, are most appropriate for immediate development. The first area is in the extreme south and southwest portions of the study area at Pleasant Valley Road. The second area shown as receptive to development begins at the northern boundaries of M-291 Highway and goes northeast into the Fishing River drainage basin. The third area is at the extreme northwest border at L.P. Cookingham Drive where development can be served by Rocky Branch Sewer plant.

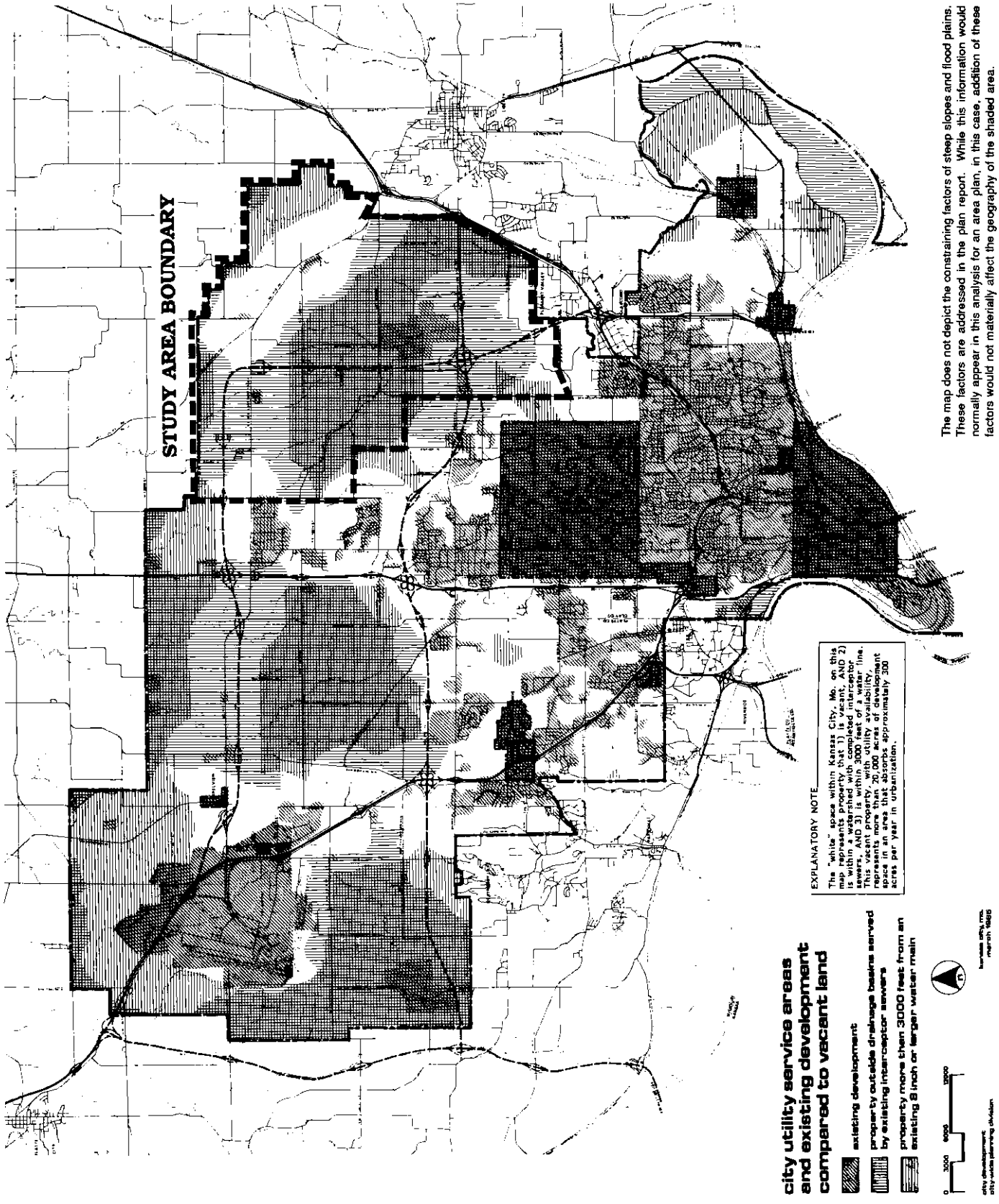
Two other factors limiting development are shown on the Environmental Features Map: a) flood plains, and b) steep slopes. The areas conducive to development in the southwest corner of the study area contain land within the 100 year flood plain, as well as land where there are steep slopes. Therefore, these natural features will affect development decisions in the southwest portion of the area where near-term growth is projected to occur.

A further analysis of the "Vacant Land Compared to Utilities" map indicates that the North Oak Trafficway corridor, primarily east of US 169 Highway, is receptive to development, based upon the availability of utilities. Another region of Kansas City North which has vacant land in watersheds served by sewer main interceptors is the Line Creek area along I-29, west of US 169 Highway. Please refer to the section on "Population in the Context of the Metropolitan Area" for a related discussion of current growth trends in these areas.

Although the map identifies and encourages new development in the designated areas, it is understood that private development decisions are often based on criteria not considered in preparing the map. The map is only intended as a general guide and highlights the more obvious constraining factors based on the availability of utilities.

KANSAS CITY NORTH, VACANT LAND COMPARED TO UTILITIES

Figure 4



SHOAL CREEK VALLEY AREA PLAN

City of Kansas City, Missouri

City Development Department

Public Facilities

Circulation

The Shoal Creek Valley area is unusual in that regional freeways and highways cut through the heart of the area and on its edges, yet the area is largely rural. For that reason few arterial and collector streets are improved currently to urban standards to link with these significant regional transportation networks. The Major Street Plan Map on the following page indicates which existing and future roads have been identified as major thoroughfares.

FREEWAYS

STREET	FROM	TO
I-435(North)	N. Mersington	M-291
I-435(East)	Pleasant Valley Rd.	M-291
M-152*	N. Brighton	I-435(East)

(*Funded)

The 1989 Major Street Plan was prepared by the City to "show the general alignment and functional classification of streets, highways and parkways in an ultimate arterial network," with the intent being to "guide development of the arterial street network and to identify the amount of street right-of-way to be obtained at the time of subdivision platting."

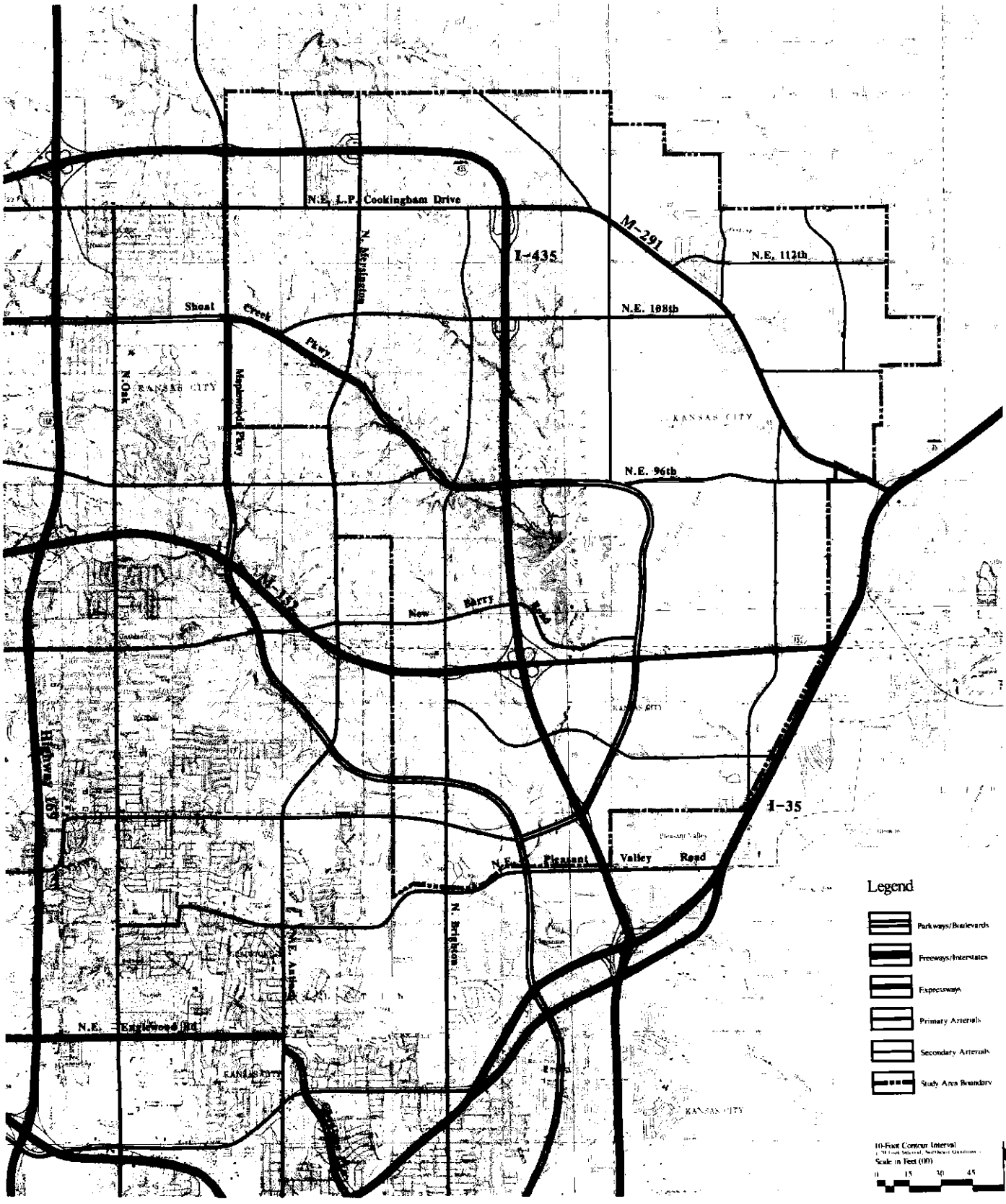
The adopted Major Street Plan for the area calls for the following thoroughfare system to serve the Shoal Creek Valley area in the future:

EXPRESSWAYS

STREET	FROM	TO
M-291	I-35	I-435(East)
M-152	I-435(East)	M-291

MAJOR STREET PLAN

Figure 5



SHOAL CREEK VALLEY AREA PLAN

City of Kansas City, Missouri

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

7920 Ward Parkway, Suite 100 ▌ Kansas City, MO 64114 ▌ 816/363-2696 ▌ BWR 91-081 ▌ 23 Jan 91

PRIMARY ARTERIALS

STREET	FROM	TO
N.E. 96th St.	Shoal Creek Pkwy.	M-291
N.E. 108th St.	Shoal Creek Pkwy.	M-291
N.E. Barry Rd.	N. Topping	Shoal Creek Pkwy.
N.E. L. P. Cookingham Dr.	N.E. L. P. Cookingham Dr.	I-435(East)
N. Indiana	Study Area Boundary	Shoal Creek Pkwy.
Maplewoods Pkwy.	West Study Area Boundary	Shoal Creek Pkwy.
N. Mersington	Shoal Creek Pkwy.	I-435(North)
N.E. Pleasant Valley Rd.	N. Brighton	East Study Area Boundary
Shoal Creek Pkwy.	N. Indiana (N. Mersington)	Maplewoods Pkwy.

SECONDARY ARTERIALS

STREET	FROM	TO
N.E. 76th St.	N. Brighton	Eastern City Limits
N.W. 96th St.	Maplewoods Pkwy.	Shoal Creek Pkwy.
N.E. 104th St.	M-291	Eastern City Limits
N.E. 112th St.	M-291	Eastern City Limits
N. Agnes	N.E. L. P. Cookingham Dr.	Northern City Limits
N. Brighton Ave.	M-152	Shoal Creek Pkwy.
N. Eastern Rd.	N.E. 96th St.	Northern City Lmts
N. Flintlock Rd.	N.E. 76th St.	M-291
N. Home Ave.	N.E. 104th St.	Northern City Lmts
N. Mersington	I-435(North)	Northern City Lmts
N.E. Sherman	M-291	Northern City Lmts

STREET	FROM	TO
N. Stark Ave.	M-291	Northern City Lmts
N. Topping	Shoal Creek Pkwy.	N.E. L. P. Cookingham Dr.

The current Major Street Plan adequately identifies needed types of rights-of-way where future dedications should be made by developers.

Education

The Shoal Creek Valley study area is served by three school districts. The western two-thirds of the area is served by the North Kansas City School District. The area approximately two miles east of I-435 to the east boundary of the study area is in the Liberty School District. The northernmost mile of the study area is in the Smithville School District.

North Kansas City School District: The 1990-1991 total enrollment in the North Kansas City School District is 15,789 students. The District anticipates enrollment in 1995 to be 18,554, with an increase of 1,255 (16%) in the elementary grades; 812 (23%) in middle schools; and 698 (15%) in high schools. The School District is beginning the process for selecting a site for one new middle school, but has not yet acquired a site.

Liberty School District: The Liberty School District has experienced an overall growth rate of five percent in the past two decades. The district anticipates increases in enrollments at about the same rate for the near future with the majority of growth occurring in the elementary schools. Enrollment in 1991 was approximately 4,500 students. The School District has no specific sites for future schools; however, they are anticipating that an elementary school and possibly a middle school will be constructed within a one-mile radius of Highway 291 and North Stark Avenue (within the study area boundary).

Smithville School District: The approximate enrollment for the 1990-1991 school year in the Smithville School District is 1,000 students. The projected enrollment in five years is 1,350 students (35% increase). One additional middle school is planned for construction next to the high school in the City of Smithville by 1993.

There is no projected need for school facility expansion from Shoal Creek Valley area growth in the near-term in this district.

Emergency Services

Police: The study area is served by the North Patrol Division of the Kansas City, Missouri Police Department located at Barry Road and Highway 169. The area encompasses Section 420, which is an area designated by the Police Department for providing public safety services and analyzing criminal activity. Relatively few crimes are reported to occur in the study area except for occasional and isolated crimes against property, such as burglaries in the rural portions of the study area and in the two established mobile home parks. Two patrol cars, #21 and #22, cover the area. There are currently no plans to expand facilities within the study area, because police protection is considered adequate from the two patrol cars operating out of the North Patrol Division of the City Police Department located at Barry Road and Highway 169.

Fire Department: Three Kansas City Fire Department stations serve the area, with a fourth planned in the vicinity of 112th-114th and Oak Street. The City Fire Department also has a mutual aid agreement with the City of Liberty Fire Department, which has three stations east of the study area. The Kansas City fire stations are at 4836 N. Brighton, 5200 N. Oak Trafficway and 8100 N. Oak Trafficway.

Ambulance: Ambulance service is provided by Metropolitan Ambulance Service Trust (M.A.S.T.), which is the only licensed provider of emergency services in the City of Kansas City. Response to residences within the corporate limits is provided within nine minutes by City ordinance, although a five-minute response time is reported by M.A.S.T as the norm for the study area and within the city as a whole. Fleet size was increased from 28 to 30 ambulances in April of 1991 in response to growth in the metropolitan area as a whole; and two more ambulances are planned for the fleet in June of 1992. The M.A.S.T. policy is to adjust service availability City-wide in response to calls; and expand service to comply with the service agreement. No unique trends or projections have been identified by M.A.S.T which call for enhanced service within the study area. The Kendellwood Nursing Home at 112th Street and North Oak Trafficway is currently the site near the study area which generates the most requests.

Boulevards, Parks and Recreation

The current Plan for Parks, Boulevards and Parkways adopted by the Board of Parks and Recreation Commissioners (1983) has made several recommendations for the Shoal Creek Valley Area. The planning area is contained within portions of three of the plan's service areas Service Area Q, R and S. The plan states that Service Area "R," (which comprises most of the Shoal Creek Valley Study area) "does not justify further study." The reason stated by the park plan for no further study is because of the projected population of less than 2,500 people in 1990. To meet the need for neighborhood parks, the park plan recommends that these be acquired by developer's allotment. The plan further recommends that a major community park area of a minimum of 80 acres be acquired in Service Area 5, through not necessarily within the study area.

The Shoal Creek Valley study area is largely agricultural and the only public park in the area is a large community park, Hodge Park. Hodge Park serves as a community park, as well as a regional park, meeting the recreational needs of the larger community beyond the bounds of the study area. In the near-term, Hodge Park will serve as a "regional resource for both Kansas City and the City of Liberty residents who will use the existing and improved golf course, play fields, and historic village. In the future, Hodge Park will also function as a community park for the residential neighborhoods and business uses that will surround it." (Hodge Park Master Plan, 1989, Board of Parks and Recreation Commissioners)

A private recreational facility, A.J. Wilson Field, operated by the North Kansas City Area Baseball League, is located on North Brighton road north of Barry Road. This facility consists of ten multi-purpose ball fields, eight of which are lighted.

While no immediate need for study of local recreational use is identified by the Board of Parks and Recreation Commissioners for the Shoal Creek Valley area, the area's large regional park was studied recently in the Hodge Park Master Plan of 1989. The plan envisions extensive improvements of Hodge Park to serve broader community needs, including expansion of the park to the east, between N.E. 96th Street and Barry Road. The proposed expansion includes plans for an amphi-theater on a lake at the southwest portion of the existing park, and a second 18 hole golf course east of the current park boundaries. No schedule has been established by the park board for the golf course expansion.

The Hodge Park Master Plan creates a structure for development of Hodge Park over time for short-term and long-term recreational needs. The plan also strives to make best use of the park's environmental assets and visual character.

> Hodge Park is the key element of Kansas City's park program for the city's emerging northeast area. Within the context of the city-wide park system over the decades to come, Hodge Park will serve growing residential neighborhoods as well as business, and will provide an essential link in the interconnected parkways, community centers, parks and open spaces that establish a high quality of life for Kansas City residents. (Hodge Park Master Plan, 1989)

As reported in the newly adopted Hodge Park Master Plan the park currently offers several recreational and historic activities including the following:

- Hodge Park Golf Course: An 18-hole golf course and club house that has experienced rapid increase in use between 1980 and the present day.

- Play fields: Eight softball fields, primarily used by church and business leagues, and soccer fields used in spring, summer and fall.

- Shoal Creek, Missouri: A recreation of an historic village consisting of about a dozen buildings from the 1830 to 1860 period. The Thornton Mansion is the largest of these buildings.

- Native Animal Enclosure: A small area including buffalo, elk and deer.

- Parking: Parking lots are located in proximity to the clubhouse and the ball fields.

- Reservoir: The 15-acre reservoir provides irrigation water for the golf course.

- Utilities: An existing 12" water line is located along Barry Road. The park is not served by sanitary sewer, but a sanitary sewer easement runs north-south along Shoal Creek through the park.

In summation, the area offers park amenities which serve community and regional recreational demand. Local park needs will grow as development occurs. The boulevards planned for the area are mapped on the Major Street Plan. As the Commission updates its park plan, the findings and projections on growth for the Shoal Creek Valley area should be consulted so that adequate recreational facilities and park lands are made available for neighborhood use.

Recommendations -- Parkway/Boulevard and Parks Planning

Goal. **Expand upon Kansas City's existing system of parkways and boulevards with consideration to the newly proposed concept of the Kansas City Metropolitan Greenway System.**

Background. Carefully selected boulevard and parkway alignments and metro-wide open space interconnections within the Shoal Creek Valley area can extend the powerful urban design framework already in place within the City of Kansas City. This can be done by planning and consensus building in advance of development to assure that future growth contributes to the significant visual experience and identity of the planning area and contributes to maintaining area identity and quality of life. The idea of creating a comprehensive metropolitan greenway system is gaining support as a viable concept within the Kansas City planning and design community and has been described by the 1991 American Society of Landscape Architects, Community Assistance Team, as follows:

> "The initiative to develop a metropolitan network of greenways and open space is a logical extension of George Kessler's vision for Kansas City a century ago. As a framework for growth of our city, Metro Green becomes a partner to other modern greenway projects across to country." (Metro Green, 1991, American Society of Landscape Architects, Community Assistance Team Project, Prairie Gateway Chapter).

Context. It is important for the Board of Parks and Recreation Commissioners to continue coordinating with the City and local interest groups in the parkway planning process. The City's Major Street Plan was prepared by the City Planning

and Development Department to serve as a guideline for ultimate development of an area and provide a basis for the review of proposed subdivision plats.

Because the parkways and boulevards connect to parks, greenways and other boulevards, their alignments should continue to be analyzed for more than simply their anticipated driving pleasure. In order to select the best alignment for future roadways, plans should take into consideration physical constraints while meeting community objectives. Planning for new parkways presents opportunities to preserve vistas in the gently rolling topography of the Shoal Creek Valley area, as well as to preserve existing vegetation. A well designed boulevard and parkway plan incorporates unique features and landmarks into the driving experience.

Recommendations

The City Development Department, Public Works Department and Board of Parks & Recreation Commissioners staff should approach each new parkway design project as a team effort with each recognizing each other's responsibilities and unique capabilities.

- When planning future alternative parkway alignments, the City should study the effects on the surrounding economy, the natural and built environment, proposed and future developments, and traffic flows and patterns.

- Incorporate enhanced design details which mark significant intersections i.e., at major creek crossings and where Shoal Creek Parkway intersects Maplewoods Parkway. These details might include limestone pillars, gateways or walls, fountains or other water features, and/or extensive tree plantings.

- Require compatible residential, commercial and industrial development entryway design along parkway frontage incorporating monument signage with traditional parkway details, i.e., limestone walls, gateways, monuments and other architectural details, fountains and tree plantings which will

ultimately contribute to the appropriate scale and character of the parkway design.

- Create strong continuous edges with tree plantings, lighting fixtures and/or building set-backs along parkway frontage.

- Create strong gateway features as parkways pass through significant boundaries such as Hodge Park, and the commercial districts which will develop in long-term future, as shown on the Future Land Use Scenario Map.

- Consider reducing driving speeds to allow for more curvilinear parkway alignment in areas where the roadway might be scenically enhanced by following the existing topography.

- Where possible and for dramatic effect along parkways, plant closely spaced (not greater than 50' on center) double rows of large shade trees in the right-of-way and medians.

- Vary roadway spatial effects; for instance, plant closely spaced large shade trees (15' - 20' on center) to create an arched, vaulted effect along roadways. This could occur as the roadway approaches a major intersection or architectural feature, or along a roadway in advance of a scenic vista or framed view.

Develop concept design guidelines for parkways *prior* to selecting alternative alignments.

- Design concepts for future parkways should address the following issues:

  - the parkway function;

  - design parameters to establish maximum grades, travelling speeds, carrying capacity, lane expansion allowances, etc.;

- relationship of the parkway to adjacent development (setbacks, buffering noise, headlight glare and aesthetic appearance and access);

- levels of traffic service;

- relationships between vertical and horizontal alignments;

- typical section descriptions that describe curb and gutter treatments, recommended driving lane widths, typical minimum median widths and pavement design standards; and

- recommended responses to physical and social issues not addressed solely through alignment selection, (e.g., provisions for landscape preservation, allowances for pedestrian circulation, connections to parks and community centers, and wetland mitigation).

Take advantage of the regional Hodge Park as an anchor when planning expansion of Shoal Creek Valley area park land and recreational facilities.

- Provide continuous pedestrian trail and bikeway access along drainage ways to Hodge Park, future commercial centers and planned school sites where possible, ultimately to be connected with the Kansas City metropolitan greenway system.

- Enhance roadway creek crossings with architectural details and plantings, especially along the future Shoal Creek and Maplewoods Parkways and major arterials, to reinforce the natural greenway/ open space system.

- Coordinate with the Board of Parks and Recreation Commissioners so that the Plan for Parks, Boulevards and Parkways implements the recommendations of the Shoal Creek Valley Area Plan in future updates of the park plan.

Existing Land Use

Existing land use in the study area is shown on the map following Table 1. The Shoal Creek Valley area is largely agricultural, with urban development in isolated areas at the edges of the study area. At the southeast and southwest portions of the area--along Barry Road and Pleasant Valley Road--is single-family residential. Also north of M-291 Highway there is single-family residential development in the North Hampton Subdivision. The North Star Mobile Home Court at N.E. 108th Street and M-291 Highway, and the Northland Mobile Home Park at L.P. Cookingham Drive contain 436 units. In the vast rural portions of the Shoal Creek Valley area, 87 farmsteads are dispersed throughout the area.

Isolated retail uses are found along I-35, and two industrial uses are at N.E. 108th Street and M-291 Highway. At the east edge of the study area, in the City of Liberty, are commercial and industrial land uses which create jobs for present and potential area residents.

The 600+ acre Hodge Park is a regional recreation facility which serves the Kansas City North area. A private recreational facility with baseball fields is on N. Brighton Road, north of Barry Road.

In summation, existing land uses in the Shoal Creek Valley area are found in urban patterns where developers have extended sanitary sewer and water service and have improved streets at the extreme edges of the study area in the southwest, southeast, and northeast. Isolated residences occur in small numbers beyond these few urban concentrations, as do farmsteads from the original agricultural pursuits in the area. Regional transportation thoroughfares are in place at the edge of the study area, and through its center. Linkages to the thoroughfares, however, are largely undeveloped. Few arterial roads are improved to urban standards north of Barry Road. As indicated on City Planning and Development Department maps entitled "Kansas City North Development Potential Reference Maps", relatively few sections lines are currently dedicated to the public

for future roads in the study area. Reference Map 29 shows that only 24.8% of the section line boundaries in Kansas City North in Clay County, north of 56th Street, are dedicated as public street rights-of-way.

Table 1
Land Use Survey

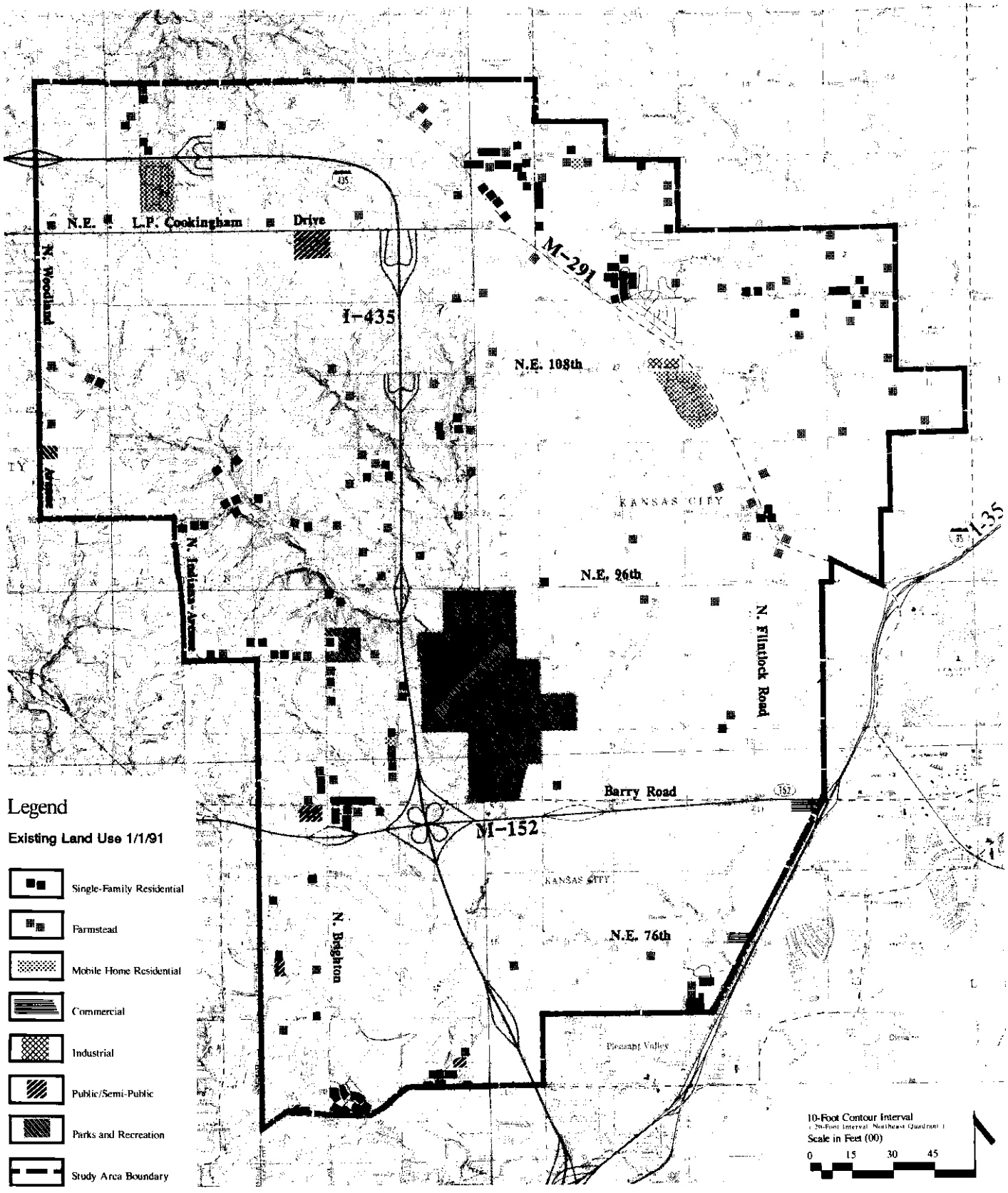
Land Use Category	Land Area (Units)	Acres*
Residential		
Single Family	242	147.5
Two-Family	0	0.0
Multifamily	0	0.0
Mobile Home	436	127.7
Farmstead	87	87.0
Mobile Home Farm	0	0.0
Commercial	3	5.5
Industrial	2	4.7
Public and Semi-Public	6	40.5
Parks and Recreation	2	644.2
Railroad		
Total Developed Land (Acres)		1,057.1
Vacant and Agricultural		19,422.9
Total Land Area (Acres)		20,480.0
Total Land Area (Sq. Mi.)		32.0

SOURCE: Bucher, Willis & Ratliff, 1991

* Farmsteads were estimated at 1.0 acre per unit for residential purposes.

EXISTING LAND USE

Figure 6



SHOAL CREEK VALLEY AREA PLAN

City of Kansas City, Missouri

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS
7920 Ward Parkway, Suite 100 | Kansas City, MO 64114 | 816/363-2696 | BWR 91-081 | 23 Jan 91

POPULATION AND SOCIO-ECONOMIC CHARACTERISTICS

Overview

The Shoal Creek Valley area is largely undeveloped. Therefore, the growth and commercial market potential of the area were analyzed in the context of the larger Clay County and Northland areas. Also relevant are published studies of public and private groups concerning development of land in and near the study area.

Population -- Near-Term Time Period

Population projections from the Mid-America Regional Council's (MARC) 1988 Long Range forecast have been aggregated to the study area. The projections are to the year 2020. Population is forecast to increase from about 1,200 people in 1990 to about 12,400 people in 2020 in the Shoal Creek Valley area. The Mid-America Regional Council projected growth for the eight-county Kansas City Metropolitan Region and summarized their projections in the agency's "Long Range Forecasts, Executive Summary," published in 1988.

> The forecasts are prepared using two sets of computer models. The first model explains why metropolitan areas grow, and is used to produce the forecasts of population and employment for the region as a whole. The other model explains why different parts of a metropolitan area grow at different rates, and is used to allocate the regional totals to 184 small areas called Regional Analysis Areas (RAA's). RAA's are aggregates of census tracts. County totals are produced by summing up the small area data for each jurisdiction.
>
> After running the models, the forecasts are extensively reviewed by the Ad Hoc Committee on Projections, a committee of local planners, economic development agencies, and members of the private sector. The committee ensures the forecasts agree with what they know to be occurring in the areas where they live and work. Only after the forecasts receive the Ad Hoc Committee's recommendation, a process which took over one year, are they sent to the MARC Board of

Directors for adoption. The MARC Board adopted the forecasts contained in this report on January 26, 1988.

The MARC Regional Analysis Area (RAA) Number 91 extends across the study area to M-291 Highway. The analysis area coincides with U. S. Department of Commerce Census Tract No. 213.02. A proportionate share analysis was used to account for population growth in the entire Shoal Creek Valley area, including areas northeast of M-291 Highway. A factor of 1.198 was used to multiply the MARC data for each time period, because the land area northeast of M-291 is approximately 19.8 percent of the study area.

The analysis was done on a proportionate share basis, because the base area (south of M-291) was considered comparable to the projected area (north of M-291). Both areas are accessed by regional thoroughfares, and have infrastructure for sewerage and water to serve growth. Both areas have experienced slow growth. They are projected by MARC to grow at relatively rapid rates after 2000, because the base population is so small.

Based on actual building permit data from 1980 to 1990, the U.S. Bureau of Census estimate for the year 1990 was adjusted up to 1,231 persons (from 1,091). The MARC projections for the years 2000 and 2010 were adjusted up, as well, to 3,949 and 9,517 persons respectively, to correlate with the adjusted 1990 base. Finally, the year 2020 projection was made by extending trends from the prior four decades. As presented in Table 2, the population forecast for the plan period is 12,379 persons living in the Shoal Creek Valley area in 2020.

Population in Context of the Metropolitan Area

Table 2 indicates that the projected near-term population growth in the Shoal Creek Valley area will be modest in absolute numbers, as compared to the 32 square mile land area; and as compared to other portions of Kansas City North and the metropolitan area. The current population base is small relative to the size of the land in the study area. As a trend over time, the population projection for the Shoal Creek Valley area represents a growth rate which is in excess of rates forecast for the City as a whole, because the base population is so small.

Clay County is projected by the Mid-America Regional Council (MARC) to be the second fastest growing county in the eight-county metropolitan area. In the "Long Range Forecasts" summary published by MARC the region is seen as growing primarily "in suburban communities as well as near intersections of the region's most frequently traveled roadways". (MARC, 1988)

The "Long Range Forecast" by MARC indicates that population will increase more rapidly during 1990-2010. The North Oak Trafficway Corridor and the Line Creek area, between I-29 and U.S. 169 Highway will absorb most of this growth.

Table 2
Kansas City Metropolitan Region
Population Projections
1980 - 2020

Sub-Areas	Population by Decade				
	1980[1]	1990[2]	2000[3]	2010[3]	2020[4]
Shoal Creek Valley Area[5]	883	1,231	3,949	9,517	12,379
Northland Area[6]	101,045	107,195	115,722	124,344	132,186
Clay County	136,488	145,894	157,622	170,317	181,638
Kansas City Metro Area	1,381,915	1,498,881	1,607,386	1,690,193	1,793,527

SOURCE: Mid-America Regional Council

[1]1980 Census Count.
[2]1990 Census Estimate, Adjusted, based on actual building permit activity.
[3]MARC Projections, Adjusted from revised base.
[4]Bucher, Willis & Ratliff Extension of MARC Projection, as adjusted.
[5]Includes data and projections for Regional Analysis Area 91 established by MARC, which includes the Plan Area to U.S. 291 Highway; and prorated data to estimate growth north of M-291 to the corporate limit.
[6]Includes Kansas City - North, City of North Kansas City & Gladstone.

The expectation for growth in the Line Creek Valley, relative to neighboring areas of Kansas City, North, and in the eight county metropolitan region, correlates with recent trends. The Line Creek area, west of US 169 Highway, south of M-152 Highway, contained 28% of Northland residents in 1987. Yet, based on analysis of building permits by the City, the area gained 52% of the estimated 14,200 new residents in the Northland between 1980 and 1987.

The other major growth corridor in Kansas City North, based upon building permits in the 1980's, was in the North Oak Trafficway area. In 1987 the corridor contained 18% of the region's residents, and accounted for 35% of the estimated growth in population from 1980 to 1987. As illustrated on the "Vacant Ground Compared to Utilities Map", the pattern of growth becomes self-sustaining, because next year's development builds off of last year's investment. Pioneer developers pave the way for new developers to build from the available water feeder mains and "bond sewer" mains within a watershed. These trends promote urban growth in the Shoal Creek Valley at the south and northeast extremes of the area.

As summarized in Table 2, Clay County is expected to gain 35,744 people from 1990 to 2020. The Shoal Creek Valley area is expected to attract 31 percent of this increase.

Household Income

Projections for the Shoal Creek Valley area and the "Northland" by MARC indicate a shift toward upper-middle- and upper-income household formation at rates faster than for the metropolitan area as a whole. As a result, it is reasonable to forecast that the Shoal Creek Valley area will benefit at least proportionately, if not at disproportionately high levels, from metropolitan-wide growth.

Table 3
Kansas City Metropolitan Area
Household Income in
Each Sub-Area by Income Group
as Percent of Total in Each Group

Sub-Area	Income Groups							
	Lower		Lower-Middle		Upper-Middle		Upper	
	1980[1]	2010[2]	1980	2010	1980	2010	1980	2010
Shoal Creek Valley Area[3]	17.2%	10.8%	17.6%	8.9%	34.4%	21.1%	30.9%	59.3%
Northland Area[4]	24.2%	21.5%	15.6%	11.5%	28.4%	20.7%	31.9%	46.2%
Clay County	26.3%	21.9%	15.4%	11.9%	28.0%	21.3%	30.3%	45.3%
Kansas City Metro Area	33.1%	23.2%	15.3%	12.2%	24.1%	19.5%	27.5%	45.1%

SOURCE: MARC, 1988

[1]1980: Census Data.

[2]2010: MARC Projection.

[3]Includes data and projections for Regional Analysis Area 91 established by MARC, which includes the Plan Area to U.S. 291 Highway; and prorated data to estimate growth north of M-291 to the corporate limit.

[4]Includes Kansas City - North, City of North Kansas City & Gladstone

Personal income in Clay County has out-paced rates of increase in the metropolitan area. The Clay County area is gaining in service sector employment as a percentage of total personal income, placing the area in step with local and national trends. Personal income from manufacturing is gaining, indicating the possibility of a stronger wage base.

Table 4
Percentage of Total Personal Income
Service Sector

	1982	1987	Percent Change
Clay County	14.38	17.20	19.6
Kansas City Metro Area	20.42	23.24	13.8
United States	20.53	24.42	18.9

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis

As with other areas of the Kansas City metropolitan area and the nation, the Clay County area is becoming more of a service sector economy.

Table 5
Percentage of Total Personal Income
Manufacturing Sector

	1982	1987
Clay County	28.95	30.29
Kansas City Metro Area	20.90	17.72
United States	23.64	20.79

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis

In summary, about 11,200 people are expected to be added to the 32 square mile Shoal Creek Valley area from 1990 to 2020. How this population is likely to be distributed is addressed in the following sections. Current data reflects a trend toward higher rather than lower income levels in the area possibly as a result of expected increases in manufacturing and related employment.

FUTURE LAND USE

Land Planning Principles

Comprehensive planning is a process by which the City can influence change, in the public interest, as it responds to development proposals. In order for a community to attain the goals it has set for its physical form and future growth, it is helpful to understand the dynamics of urban development. Without such an understanding, local efforts cannot promote community goals as effectively. The Shoal Creek Valley Area Plan has been developed with the land planning principles presented in this section.

Land Use Externalities

As Kansas City plans for meeting the needs of new urban development pressures in largely agricultural areas, several planning issues become relevant. One of the most basic factors affecting the use of a given parcel of land is the land use impact from adjoining parcels. Economists refer to this impact as a "land use externality" because it is generally not included in the property owner's decision-making process. As an example of land use externalities, a residential district which fronts an arterial street, and faces a commercial strip, has less value than a similar district integrated within a residential neighborhood. In effect, the land use incompatibility creates a cost imposed by the commercial owners on the residential owners. The best way to minimize these external costs is to a) inter-relate the multiple land uses in a planned mixed-use development, or b) separate incompatible land uses with effective urban design and buffers. These planning principles help create effective transitions between residential and commercial areas.

As urban uses begin developing along M-152 Highway and on the future arterial roads from I-435 interchanges, the Shoal Creek Valley urban pattern can be carefully planned to allow the major thoroughfare roads to continue carrying traffic; while at the same time, residential areas can develop in an attractive manner. Subdivisions along the arterial roads must be designed to minimize conflicts. Characteristics which most people seek in a residential area--quiet, serenity, stability--can be protected implementing the recommendations of the area plan.

Non-residential uses which are not designed as part of a mixed use development can be made compatible with sensitive screening and other mitigating design features. The area plan presents recommendations for achieving this objective in the "Critical Land Use Development Issues" section beginning on page 43. Positive externalities can develop, as well. A concentrated shopping district will attract customers from a wider market area than will commercial uses dispersed through an area. Clustering retail and commercial uses where arterial roads intersect, for example, benefits the commercial use, while protecting residential districts from commercial strips.

Transportation Access

A second factor which influences the planning of future urban land uses is the location of major transportation corridors. The greater the transportation need of a particular use, the greater its preference for a site near major transportation facilities. Retail and office activities are most sensitive to accessibility since their survival depends upon customers and employers travelling to their location often during peak hours.

Retail and office land uses in the Shoal Creek Valley area are indicated on the Future Land Use Map along the arterial roads off of the I-435 corridor. Retail and office land uses are also clustered at the intersections of arterial streets and I-35, M-152 and M-291 Highways. The clustering of retail and office uses helps channel traffic efficiently onto arterial streets. Clusters of retail activity create discrete retail districts. Retail districts are more easily remembered by the consumer than scattered activities, and allow the joint use of parking facilities.

Distribution of Public Services

Certain urban patterns are more efficient and therefore less costly to serve than others. This issue has increasing relevance as the City plans for expansion of residential uses into the Shoal Creek Valley from the southeast, southwest and northeast. Compact growth in the Shoal Creek Valley area can be achieved by encouraging development adjacent to the existing built-up areas rather than allowing "leap-frog" development over large tracts of undeveloped land. The policy of the Water Pollution and Control Department of requiring developer payment for utility main extensions facilitates compact growth.

A second means of increasing service delivery efficiency is to cluster those land uses which have the greatest need for fire and police protection, such as institutional, retail and office uses. This clustering will allow the concentration of protection efforts where they are most immediate. The Shoal Creek Valley Area Plan anticipates the retail and office commercial uses to cluster by market demand along the transportation corridors. The challenge for the City will be to anticipate the non-residential growth as it follows the emerging residential growth; then extend utilities up the East Fork Shoal Creek and Little Shoal Creek watershed basins at a time which most cost-effectively serves that growth.

Neighborhood Design

The concern about urban design can be summarized by focusing on neighborhood design. Good urban design can help new developments relate to adjacent developments to form strong neighborhoods. The land use pattern of a neighborhood plays a major role in determining its strengths and weaknesses.

Ideally, neighborhoods should be centered around schools and parks which serve as the recreational and cultural, as well as educational hubs of the district. Efficient and safe corridors to the school should be created for vehicular, bicycle and pedestrian traffic by implementing plans for linear parks. The Future Land Use Map indicates linear park/bicycle paths that link into regional Hodge Park from residential areas, both east and west of I-435.

From 2,500 to 5,000 people are necessary to have sufficient population to warrant provision of a public services such as schools and parks, and to support convenience shopping. As the Shoal Creek Valley residential growth extends toward the center of the area from the south and northeast, the importance of the planning process becomes clear. The Major Street Plan should be followed to create efficient access to residential areas which will be bordered by I-435, M-291 Highway, and M-152 Highway. The Utilities Plan for Capital Improvements should be followed in extending main trunk lines for water and sewer service into the East Fork Shoal Creek and Little Shoal Creek basins.

Whether the Fishing River sewer interceptors are extended west of M-291 Highway from the northeast, as well as in the watershed east of the highway, will be a critical issue for the City to consider. The highway splits the area, creating future

multiple neighborhoods toward the center of the study area. The highway dictates neighborhood form in the future.

There are pressures in the Shoal Creek Valley for development outside of areas where public sewers already serve growth. Extending sewer interceptors in force mains from the West Fork Shoal Creek and Rocky Branch basins, or from the Fishing River basin would create a more dispersed urban growth pattern in the northern portion of the study area. Neighborhoods would develop in a more dispersed pattern under this scenario, than if sewer lines are extended from the south in the East Fork Shoal Creek and Little Shoal Creek basins. The distribution of public services would become more dispersed in this pattern of development. Emergency services would have to be extended to farther regions as would major thoroughfares to serve local growth.

Land Use Development Pattern

Based upon the population projections, land use planning principles and development patterns identified in the study, as well as suburban development patterns in the Kansas City metropolitan area, future land use in the long-term, ultimate built-out state is projected to follow the patterns presented in Table 6.

Residential Growth

The pattern of residential growth is expected to extend from developed areas in the southeast and southwest portions of the study area. Areas along M-291 and further northeast will develop, as well, served by utilities in the Fishing River drainage basin.

The I-435 corridor, and other land uses in the core of the study area will develop in later stages only after a) more and more homes are built and b) the core areas are served by water mains, sewer interceptors, and major arterial streets. Developments such as Charleston Harbour north of Pleasant Valley Road, east of N. Brighton are being built in the southwest portion of the study area, with 77 platted lots. In the northeast, the North Hampton subdivision has filed a preliminary plat of 204 acres, containing 794 proposed lots. Initial phases are final platted with streets constructed, lots sold, and single family homes built. In

summary, urban residential development is occurring at the south and northeast extremes of the area under study.

Potential residential development in the next 20-30 years may be projected based upon estimates of population from Table 2 and low-to-moderate-density residential patterns from Table 7.

The current population base of the 32 square mile study area, is small in absolute number, relative to the metropolitan area. Therefore, while other areas of the "Northland" are expected to grow only moderately, the absolute number of households added to the Northland will be greater outside the study area than inside the study area.

Table 6
Shoal Creek Valley Area
Potential Long-Term Development
by Land Use Type

Land Use	Percentage	Acres
Residential	45.7%	9,359
Retail/Office	8.0%	1,638
Assembly/Warehouse	1.5%	307
Public/Semi-Public	6.1%	1,249
Parks/Open Space	7.7%	1,577
Streets/R-of-W	19.8%	4,055
Undeveloped	11.2%	2,294
Total	100%	20,480

SOURCE: Bucher, Willis & Ratliff

Note: Low-moderate density residential, suburban, without heavy industrial uses is the development pattern assumed, as presented in Table 7.

Probable Residential Development Pattern -- Long-Term

In establishing which pattern of residential development may be expected in the Shoal Creek Valley area, the extreme high-density and extreme low-density residential development patterns as presented in Table 7 were rejected as unrealistic. The high-density extreme would anticipate 90 percent of residential housing developed in a high density of 15 units per acre. A pattern of development as dense is not found in 32 contiguous acres in the entire City or metropolitan area.

The low-density extreme of suburban estate development on 20 acre lots was rejected, as well. The cost of development on urban utilities and streets is too great to support extremely low-density residential. The market costs dictate that urban growth occurs in low-to-moderate-density patterns.

Table 7
Shoal Creek Valley Area
Density of Residential Development

Density Patterns	20 Acre Units (.05)	2.8 U/Acre	15 U/Acre	No. Units	Population at 2.54/Unit	Employees at 46.7% Employ (100% from Area)	Average Density Unit/ Acre	Average Density Pop/ Acre
Low	80%	20%	0%	5,615	14,263	6,661	0.60	1.5
Low/Moderate	0	85	15	43,332	110,064	51,400	4.63	11.8
High	0	10	90	128,967	327,576	152,978	13.78	35.0

SOURCE: Bucher, Willis & Ratliff

The most probable development pattern for the Shoal Creek Valley area is a Low-to-Moderate-density Development Pattern. The low-to-moderate-density residential pattern is summarized in Table 7, and presented on the "Future Land Use Plan" map. The scenario is presented as an ultimate build-out plan, without reference to the time it will take to reach complete absorption of land as presented in Table 6.

Probable Residential Development Pattern -- Near-Term

To better understand the probable near-term development patterns in the Shoal Creek Valley area, the plan has used the following methodology:

- Combine the thirty year population projections from Table 2 with the probable low-to-moderate-density residential development patterns; and

- Project land use development by the land planning principles presented in this section for neighborhood, commercial and public-semi-public land use development; and by the public utility extension policies in force by the City.

Recommendations -- Residential Development

Goal. **Establish the Shoal Creek Valley as an area where a range of residential land uses may develop in Kansas City, such as large estate residential, as well as more dense residential.**

Background. The existing residential land use in the Shoal Creek Valley study area is predominantly isolated farmsteads, and large-lot single family residences, with more dense urban residential subdivisions at the south and northeast edges of the area.

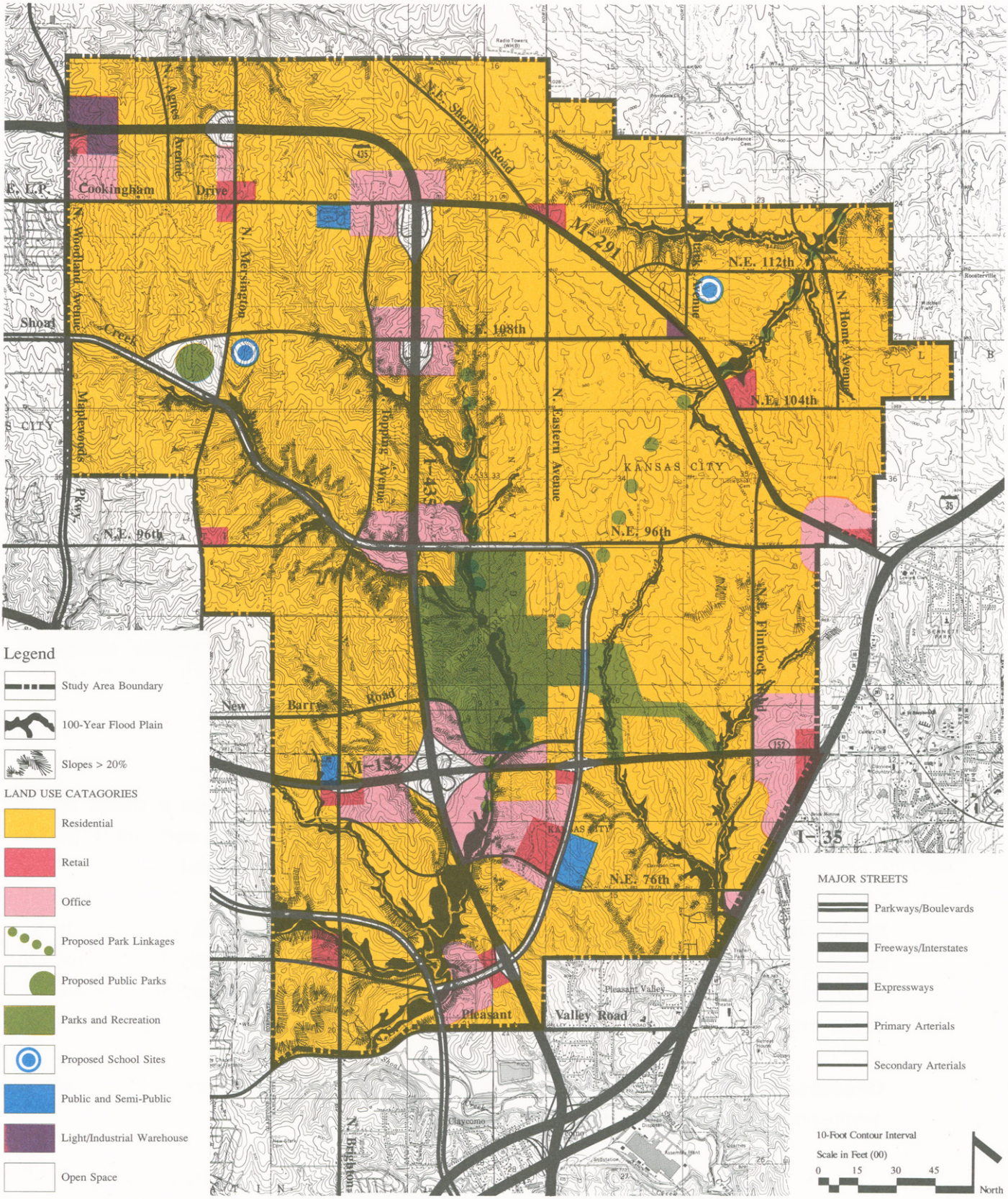
Context. Within the next thirty years, the Shoal Creek Valley area residential development patterns will follow certain trends:

- Approximately 12,400 people are estimated to be living in 4,874 dwelling units;

FUTURE LAND USE PLAN

LOW- AND MODERATE-DENSITY

Figure 7



SHOAL CREEK VALLEY AREA PLAN

City of Kansas City, Missouri

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

7920 Ward Parkway, Suite 100 ▌ Kansas City, MO 64114 ▌ 816/363-2696 ▌ BWR 91-081 ▌ 23 Jan 91

- 1,049 acres of land are estimated to be developed as residences in low-to-moderate-density patterns, mostly as single family homes;

- 2,296 acres of land, or approximately 3.6 square miles, will be expected to develop overall in an urban pattern by 2020 in the Shoal Creek Valley area, which comprises less than 12% of the land area of the Shoal Creek Valley study area.

For planning purposes the Shoal Creek Valley area is expected to experience urban growth in six to ten square miles of land during the next 30 years, or up to one-third of the study area, because of the dispersed nature of development at the "urban fringe." Residential development is expected to spread in one of two patterns:

- Incrementally on large lots served by individual septic tanks, as well as dispersed where residents petition and pay for water feeder mains, and extensions of sanitary sewer interceptors; or

- More compact in areas where the City has extended main trunk line sanitary sewers, where water service is available, and where major streets are improved.

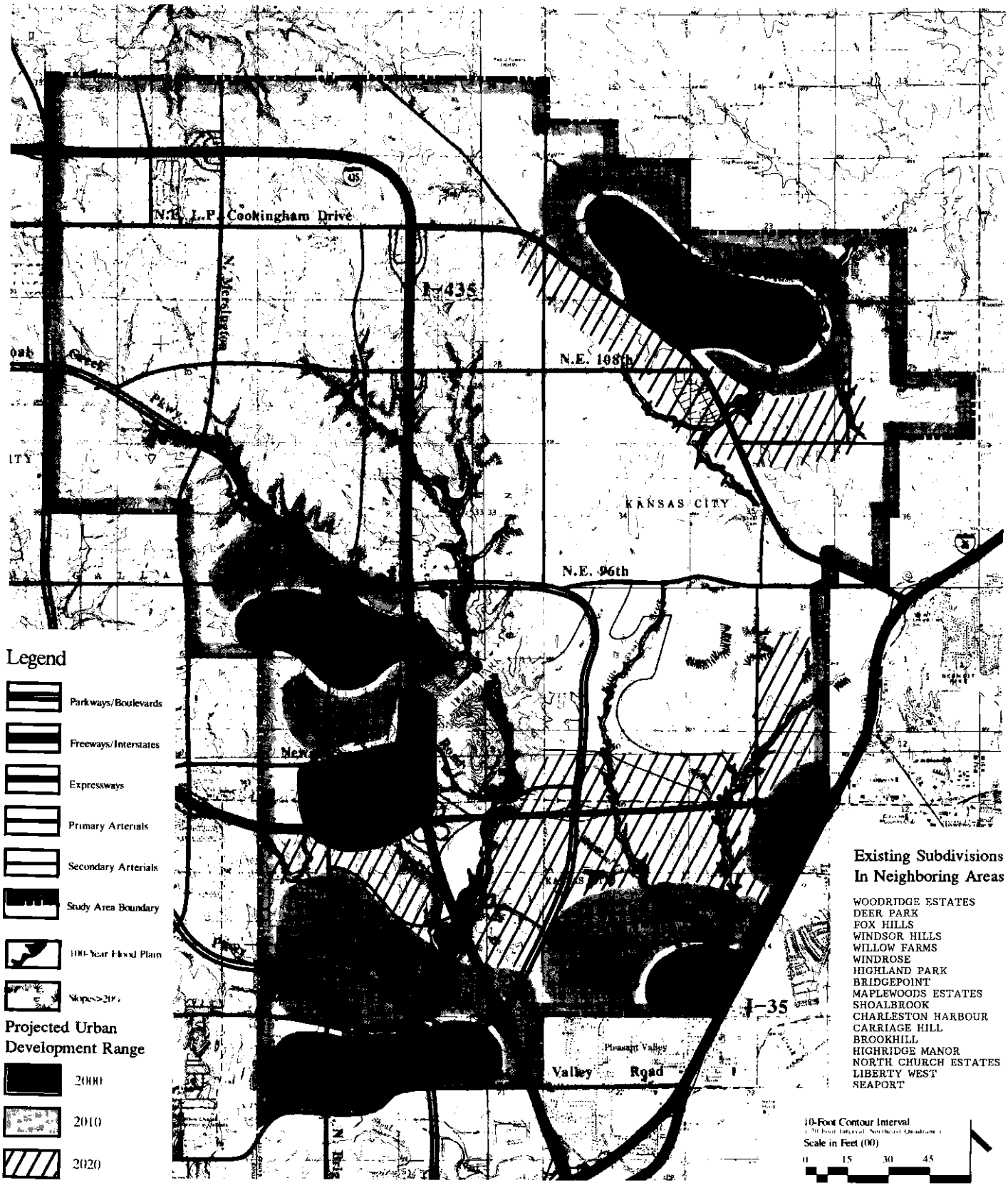
Growth is expected to progress toward the heart of the study area from the southwest, southeast and northeast, where urban utilities and roads already serve the beginnings of subdivision development.

The "Future Land Use Scenario" maps on the following pages, the *Systems Development Pattern* map and *Incremental Development Pattern* map, depict how urban growth is projected to spread toward the heart of the study area. The former depicts more compact growth, as it follows extensions of existing sanitary sewer mains; while the latter depicts more dispersed growth, anticipating incremental estate development, and in some cases large-lot residential development on individual septic tanks at the center of the area.

FUTURE LAND USE SCENARIO

SYSTEMS DEVELOPMENT PATTERN

Figure 8



SHOAL CREEK VALLEY AREA PLAN

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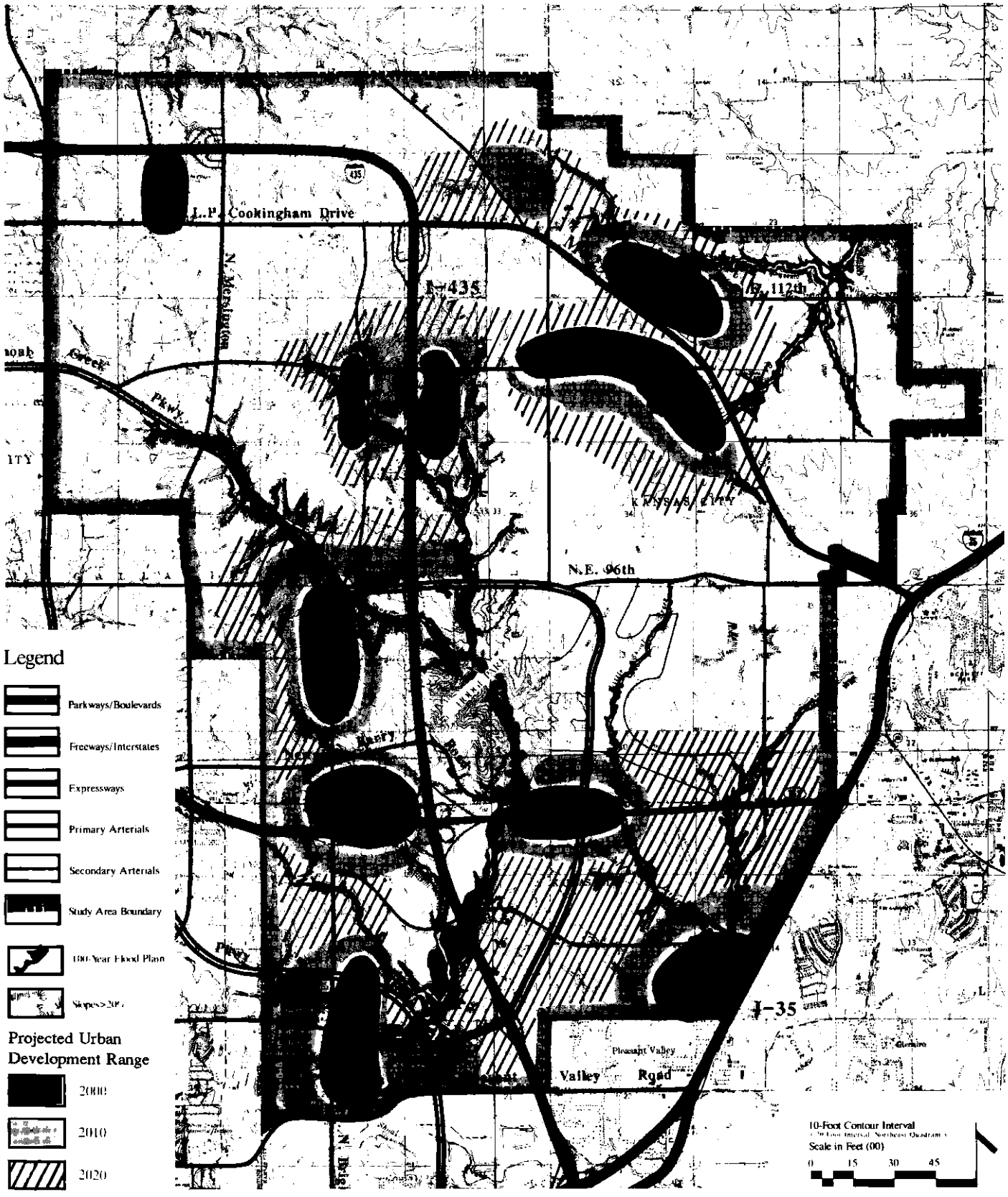
FUTURE LAND USE SCENARIO

INCREMENTAL DEVELOPMENT PATTERN

Figure 9



SHOAL CREEK VALLEY AREA PLAN

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Recommendations

Provide opportunities for diverse residential land uses throughout the study area.

- Allow for large-lot, low-density residential development and more limited medium-to-high-density residential development;

- Recognize that there is a market for diversity of land use throughout the Shoal Creek Valley area, and establish zoning districts which range from suburban estates to office and commercial uses along the interstate corridor;

- As residential development progresses through the Shoal Creek Valley area, develop utility mains where urban land uses may be most cost-effectively served; and

- Continue the public policy of extending public infrastructure mains only in response to market-driven development demands from developers, where local "joint district sewers" are approved and ready to be constructed.

Critical Land Use Development Issues

The following issues are critical to land use development, based on the analysis of the area plan:

- Growth is expected to progress toward the heart of the study area from the southwest, southeast and northeast, where urban utilities and roads already serve the beginnings of subdivision development;

- The projected growth to the year 2020 will be steady, but will extend at the farthest reaches into only six to ten square miles of the 32 square mile area;

- The near-term growth to the year 2020 will occur mostly south of M-152 Highway and north of M-291 Highway, because growth is projected to spread primarily from existing developed areas;

- Utilities should extend from south to north along the East Fork Shoal Creek and Little Shoal Creek drainage basins; and from the Fishing River basin;

- Additional utilities should extend from neighboring basins if development occurs in a more incremental pattern, for example served by force main sanitary sewers from the West Fork Shoal Creek drainage basin for development west of I-435 at 96th Street, and east of I-435 along 108th Street from the Fishing River drainage basin; and

- Long-term growth beyond the next thirty years will occur along I-435 and L.P. Cookingham Drive. The long-term, future development of the entire Shoal Creek Valley area in a built-out state is projected to follow a low-to-moderate-density residential pattern. Based on interviews with developers in the area, it is assumed that residential growth will drive development. Commercial and other non-residential growth in the Shoal creek area will follow residential growth.

Recommendations -- Land Use Development

Goal. **Near-term, low-density development (such as large-lot residential development) should be regulated so that it does not foreclose long-term, higher-density urban development.**

Background. If a tract of ground does not require platting, many improvements often required by the City of the developer, such as dedicated street rights-of-way, utility easements, street improvements, sidewalks and water mains, are neither dedicated nor constructed. Also, the Minimum Lot Dimension section of the Subdivision Ordinance, which requires "lot depth generally not exceeding three times the lot-width", cannot be enforced. In the past, the only enforcement by the City of residential developments over five acres comes from the District RA

Agricultural section of the Zoning Ordinance through Building Codes. The City Council approved a change, from five to twenty acres, in the minimum size of land area not requiring platting. This went into effect on October 5, 1992, in Ordinance Number 920274.

History. The Place Liberté proposal in the mid-1960's created the perceived need to construct the 20" and 24" water feeder main across the Shoal Creek Valley study area, from North Oak to M-291 Highway. Availability of a federal grant in the early 1970's to construct the Fishing River wastewater treatment plant spurred development of sanitary sewer facilities at the extreme edge of the City. The two improvements were examples of public utilities *preceding* private developer requests for utilities.

Water and Pollution Control Department policy has never been to precede developers into drainage basins. Constructing water feeder mains into the Shoal Creek area *before* they were assessed to developers was a departure from practices that existed before the Place Liberté experience, and that have been followed since.

Place Liberté failed to develop. A proposal in the early 1970's for a New Town development from Kansas City International Airport to the City of Liberty did not develop, as well. No alternative large-scale urban development occurred in the northeast portion of the city. As a result, urban demand for utility service has not reached sufficient levels to make adequate use of the water feeder main and the regional wastewater treatment plant.

The Fishing River interceptor sewers and treatment plant were constructed with funding provided through Environmental Protection Agency grants with city and state matching funds making up the balance of the construction costs. The availability of EPA grants was predicated upon forecasts of substantial growth occurring in the Fishing River watershed which would justify the investment in sewer capacity. In 1984, a federal review was conducted to determine if the Fishing River grants had been justified. It was the initial finding of the audit that federal participation in the funding had been inappropriate due to the failure of the forecast development to have been realized. The audit recommended that the City repay the federal grant which had funded 75% of the construction cost. The City of Kansas City responded with documentation indicating that although the forecasts had been proved in error by the passage of time, they had represented

"the best available planning indicators" at the time the grant was obtained. Subsequent federal review concurred with the City's position and Kansas City was able to avoid repayment of the federal grant. The incident has, however, caused the City to become much more prudent in evaluating the necessity for major expansions in sewer capacity.

Today, the Water and Pollution Control Department follows a policy of supplying utilities upon clear demand. Under a charter amendment adopted in September of 1970, the City can finance assessments of property owners who benefit from a project to pay for the costs of utility main extensions. Through special assessment payments, the benefitted owners pay for the project.

Context. Water feeder mains are extended when a sufficient petition is submitted asking for assessments. As a result, the feeder mains follow established patterns of development, and are paid by assessments of private property. For example, a 12" water distribution main has been extended in the past year from the 20" feeder main north of Pleasant Valley Road at the cost of developers of the Oak Crest and Barry Point projects. The extension east of I-435 along 76th Street to Flintlock Road was paid "up front" by the developers. In this case, the private developers, rather than the City, financed the bonds. Special assessments against the benefitted property owners along 76th Street and Flintlock Road will be paid to the City, and then passed to the developers by the City under an agreement between the two parties. In this case, the public not only avoided paying for the utility main extension, but also avoided serving as the "bank" in financing the utility revenue bonds. An 8" water service main was extended at public cost to serve Hodge Park.

With sanitary sewers, the policy of the department is to extend trunk sewer mains only after the "pioneer developers" in the area have taken out permits to begin constructing local sewer lines. The local lines are considered lines smaller than 21", and are referred to as "joint district sewers." The main trunk line sewers are larger than 21" and are constructed to serve an entire drainage basin. The large main trunk lines are also referred to as "bond sewers", because they are financed by the city-wide revenue bond program. In 1985 a vote of Kansas City residents allowed general obligation bonds for financing new utility main construction for the first time since the charter amendment of 1970.

Utility main extension policies directly affect--*and are affected by*--residential development patterns. As such, there is a relationship between public policies of the Water and Pollution Control Department and the City Planning and Development Department. The issue is timely as it relates to the Shoal Creek Valley area. Development on lots of five acres or larger is occurring in the Shoal Creek Valley study area. Large lot development patterns are extending from neighboring territory west of the study area. Property owners in the area are asking for water service to support the low-density, large-lot development.

Since there is now a platting requirement for residential lots over five acres, lots can be regulated to preserve environmentally sensitive areas. In addition, sizes and shapes of lots can be created which are compatible with the potential needs of future development. For instance, most open space areas and existing lots over three acres are in the RA Agricultural Zone. The Lot Area Frontage requirement in the RA zone is a minimum 120 feet. Since most of these residential lots are five acres and have a minimum lot frontage of 120 feet, the lot depth is often up to 1,815 feet. These extremely long and narrow lots create potential problems in the future when attempts are made by either the residents or future developers to:

1) Bring the City sewer system into the area, or

2) Assemble several of these five acre tracts into one ownership for subdivision purposes.

City sewers are often not economical for residents in outlying areas where five-acre residential lots are popular. Septic systems are therefore allowed, saving some lot development costs. As smaller residential lot developments reach the area, or as the septic systems age, most residents prefer to bring in the City sewer system. If some of the residents resist, the sewer improvements may not occur and the septic systems remain in place unless there is a health hazard and the City is required to construct the improvements. Depending on the soil structure of the area, septic systems can pollute ground water.

Five-acre residential tracts in outlying areas might be viewed as a holding use, with the assumption that in the future these tracts will be assembled and subdivided into smaller lots. If this is the case, it is easier to assemble fewer lots (with fewer ownerships), than several 5-acre lots (with several ownerships).

Now that the City requires the platting of all tracts which are less than 20 acres, reasonable lot improvements can be required, the size and shape of the lots can be reviewed and environmentally sensitive areas have more potential for preservation. Through land use planning and its implementation through properly designed codes and regulations, reasonable lot improvements on lots less than 20 acres will be required and the size and shape of building lots will be reviewed for environmentally sensitive areas which have potential for preservation.

Recommendations

- The City should begin using the platting requirements of the amended Subdivision Regulations so that all tracts less than 20 acres are platted in patterns that accommodate future, more intense development.

- Continue coordinating the actions of the Water and Pollution Control Department with the City Planning and Development Department to ensure that utility extensions foster orderly development.

- Extend public infrastructure mains in response to market-driven development trends to maintain reasonable utility rates and to retain long-term urban development opportunities.

- Coordinate Shoal Creek Valley area infrastructure plans with city-wide capital improvement programming.

Non-Residential Growth

The Shoal Creek Valley Area Plan uses residential growth to make projections of non-residential growth. The plan assumes a pattern of low-to-moderate-density residential development. Non-residential growth in the near-term will be minimal due to the relatively modest absolute numbers of people projected to reside in the study area in the year 2020.

Commercial Development Potential

The area plan projects future, long-term retail development based upon an Urban Land Institute analysis of retail commercial patterns, summarized as follows:

The *neighborhood center* provides for the sale of convenience goods (food, drugs, and sundries) and personal services, those which meet the daily needs of an immediate neighborhood trade area.

A supermarket is the principal tenant in the neighborhood center. Consumer shopping patterns show that geographical convenience is the most important factor in the shopper's choice of supermarkets. The customer usually chooses such stores from among those most conveniently located, usually those nearest the shopper's home. Only as a secondary consideration does wide selection of merchandise or service come into play.

The neighborhood center has a typical gross leasable area of about 50,000 square feet but may range from 30,000 to 100,000 square feet. For its site area, the neighborhood center needs from 3 to 10 acres. It normally serves a trade area population of 2,500 to 40,000 people within a 6-minute drive.

The *community center* is built around a junior department store or variety store as the major tenant, in addition to the supermarket. Such a center does not have a full-line *department store*, although it may have a strong specialty or discount store as an anchor tenant.

Table 8
Characteristics of Shopping Centers

Center Type	Leading Tenant (Basis for Classification)	Typical GLA	General Range in GLA	Usual Minimum Site Area	Minimum Support Required
Neighborhood Center	Supermarket or drug store	50,000 sq. ft.	30,000-100,000	3 acres	2,500-40,000 people
Community Center	Variety, discount, or junior department store	150,000 sq. ft.	100,000-300,000 sq. ft.	10 acres or more	40,000-150,000 people
Regional Center	Mall development	800,00 + sq. ft.		50 acres	150,000 people +

SOURCE: Urban Land Institute

The community center has a typical gross leasable area of about 150,000 square feet but may range from 100,000 to 300,000 square feet. For its site area, the community center needs from 10 to 30 acres and, normally serves a trade area population of 40,000 to 150,000 people.

The *regional center* is a mall development with multiple retail vendors and enclosed shops, serving a trade population in excess of 150,000 persons.

Table 9
Typical Suburban
Cluster Retail Development

	Clusters Per Population	Land Area	Gross Leasable Area (GLA)	Employment
Neighborhood Center	1:10,000	6 acres	50,000	1.8/500 GLA
Community Center	1:35,000	20 acres	100,000	1.8/500 GLA
Regional Center	1:150,000	60 acres	800,000	1.8/500 GLA

SOURCE: Urban Land Institute

As summarized in Table 10, the low-to-moderate-density residential pattern indicates that in an ultimate built-out state, eleven neighborhood retail centers would serve a projected population of 110,064 persons. (The population projected in the long-term, built-out state is summarized in Table 7). In addition, the residents of the area could support three larger community retail centers (again, summarized in Table 10) with a retail anchor, small shops and supermarket. (The area plan does not attempt to project numbers of isolated, retail uses, such as convenience stores.)

For purposes of the area plan, the "ultimate built-out state" of the study area is reached when land throughout the entire area has been developed in a general urban pattern, in other than agricultural uses.

Table 10
Potential Cluster Retail Development
Shoal Creek Valley Area

	Neighborhood Center		Community Center		Regional Center		Acres of Retail	GLA	Employment
	No.	Acres	No.	Acres	No.	Acres			
Low Density 14,263	2	12	--	---	--	---	12	100,000	360
Low-Moderate Density 110,064	11	66	3	60	--	---	126	850,000	3,060
Moderate-High Density 327,576	33	198	9	180	2	120	498	4.1 mil	14,940

SOURCE: Bucher, Willis & Ratliff

The Kansas City metropolitan area reflects the national economic outlook, according to a report compiled for Property Reserve, Inc., a large land holder in the Shoal Creek Valley area. Growth is forecast to be steady. Concerning the Clay County portion of the metropolitan area, the Property Reserve, Inc. study concluded that the area "has limitations".

The long-term factor limiting development is the slow but steady growth of the region. Slow growth requires a slow pace of development which avoids over building and creating financially unsuccessful projects. The limiting factors of market size and demand tell the prudent developer to develop at a reasonable pace. In the short term, development will be physically constrained by the limited infrastructure service areas, as well as economically constrained as the economy slows down and banks tighten their lending criteria. (Property Reserve, Inc., 1990).

Concerning the I-435 corridor, the report concluded that the area requires a "pioneering development project" to attract further construction activity which would otherwise go to more established areas. (Property Reserve, Inc., 1990)

Table 11
Projected Shoal Creek Valley Area
Employment

	Number of Employees			Land Area In Office/Commercial	
Total Employment	**Cluster Retail**	**Light Assembly Warehouse***	**Office Park Commercial**	**Office Space @ 200 sf per employ (000,000)**	**No. of Acres At 20 FAR**
Low Density 6,661	360	472	5,829	1.2	138
Low-Medium Density 51,400	3,060	3,648	44,692	8.9	1,026
High Density 152,978	14,900	10,857	127,221	25.4	2,916

* Prorated from low-to-moderate-density.

SOURCE: Urban Land Institute
Bucher, Willis & Ratliff

Examining further how one area land-owner and developer, Property Reserve, Inc., has studied the local market, their report summarized the "market potential" for 6,190 acres of land holdings in the Northland as suitable primarily for residential. The majority of the company's land studied in the report is located in the Shoal Creek Valley. In the northern one half of the Shoal Creek Valley area the report indicated market potential for development of 2,761 acres by two major land use categories: a) 2,065 acres (75%) developed as low-density residential, and b) 690 acres (25%) as retail office or warehouse.

In the south one half of the study area (and portions beyond the study area) there were four categories of land use shown in the same report as having potential for development: a) 2,075 acres (79%) low-density residential, b) 56 acres (2%) medium-density residential, c) 368 acres (14%) retail/office/warehouse, and d) 125 acres (5%) open space.

Recommendations -- Commercial Development

Goal. **In reviewing development proposals, such as in site plan reviews, the City should promote orderly retail and office development which is compatible with residential land uses, blends with the natural beauty of the environment, and makes efficient use of the local and regional thoroughfare infrastructure.**

Background. The existing retail and office development in the study area is limited to isolated businesses at I-35 and M-152 near Barry Road. Pressure for business development is typically exerted at "urban diamond" interchanges on interstates and other highways.

Context. Throughout the Shoal Creek Valley area, numerous interchanges connecting to local arterial roads have been developed, or will be developed in the future. Retail commercial development other than cluster-retail centers is projected based upon total future employment in the Shoal Creek Valley area. Of the 51,400 persons expected to join the area labor force, 3,060 are expected to work in the "Cluster Retail" businesses as shown in Table 11; and 3,648 are estimated to work in "Light Assembly/ Warehouse jobs. The remaining 44,692 employees of the Shoal Creek Valley area--in its ultimate built-out state, by the

land use assumptions of a low-to-moderate-density residential pattern--are expected to work in office/ commercial businesses. Assuming 200 square feet of office space per employee, up to 8.9 million square feet of office is projected. The plan further assumes a low floor-to-area ratio (FAR), where about 20 percent of commercial land areas are improved.

Recommendations

Create good urban design along commercial thoroughfare corridors by linking developments with common and consistent design patterns through the following means:

Promote Orderly Commercial Development

- Cluster commercial centers, particularly community centers, at the arterial roads which connect to the freeway and expressway interchanges;

- Coordinate major thoroughfare improvements in the Major Street Plan with patterns of commercial growth so that streets can accommodate increased traffic volumes;

- Create strong continuous corridor edges using either consistent building setbacks or continuous sequences of plant materials, lighting fixtures or compatible signage;

- Minimize curb cuts and median breaks;

- Require adjacent commercial uses to design internal connections between parking lots to minimize street traffic and curb cuts;

- Require all commercial developments to be pedestrian-oriented with clearly identified walk-ways between parking lots and buildings;

- Lighting for businesses and parking lots should be low glare and designed so as not to shine directly into adjacent residential areas;

- Where possible, encourage the location of developments internally to site, maintaining a solid vegetated edge along thoroughfare frontage;

- Require substantial vegetated buffering and screening of distracting and unsightly development elements;

- Require substantial vegetated buffering and screening between incompatible land uses;

- Require parking lots to be planted with appropriate number of shade trees (one tree for every five to ten parking spaces is recommended); and

- Require commercial and industrial developers to maintain trees and plants they have installed as landscaping.

When regulating new commercial development, protect the natural open space framework formed by Shoal Creek, its tributaries and watersheds.

- Businesses should be clustered in developments to allow for the preservation of stream corridors (includes drainage channel, stream banks and flood plain areas) as open space areas in office park, commercial and industrial centers;

- Use the site plan review process to promote clustering development for the preservation of scenic ridge lines and topographic high points as open space in office park developments;

- Orient and align buildings and developments with a sensitivity to the existing watershed land forms, i.e., cluster development along or within ridge lines, high points, upland meadow and woodland areas, hill slopes and lowland meadow and woodland areas; and

- Encourage the design of residential and office park internal traffic circulation to make it sensitive to the existing topography; for example, designing streets with tighter curves on naturally rolling

terrain so that the buildings blend more with the natural lay of the land and traffic slows down.

Industrial Development

The analysis by MARC of regional employment trends indicates that Clay County will be second highest to Johnson County in growth of jobs from 1990 to 2010. The growth north of the Missouri River, however, is forecast to be rapid only in the City of Liberty and along the U.S. 169 Highway corridor. The Shoal Creek Valley area employment is seen as growing at a relatively moderate rate.

Table 12
Projected Shoal Creek Valley Development
Light Assembly/Warehouses - Low-Moderate Density

Acres	Employees Per Acre[1]	Total Employees[2]
307	12	3,684

SOURCE: [1] Urban Land Institute
[2] Bucher, Willis & Ratliff

Heavy industrial uses are not forecast for the area. The lack of railroad infrastructure diminishes the competitive position of the study area for heavy industry, compared to other areas of the Northland, such as North Kansas City. Only 1.5 percent of the 32 square mile area is expected to see light assembly and warehouse uses.

The light industrial/warehouse land use patterns in suburban fringe communities, such as Overland Park, Kansas, were analyzed to project 1.5 percent of land area in such uses. 307 acres of land in the Shoal Creek Valley study area is expected to develop as light industrial in an ultimate built-out state. The Property Reserve, Inc. study was consulted, as well, in arriving at the light industrial land use

projection. A location near the interstate, with direct access to a linking arterial road, served by adequate utilities will be the appropriate location for such industry. Numerous sites fit this description for where the relatively few acres of light industrial development will likely want to locate.

Industrial development is not expected to extend into the Shoal Creek Valley within the near-term period of the area plan study, based on a projected population of 12,400 persons in the year 2020. Therefore, no detailed recommendations for industrial development within the Shoal Creek area are presented. The long-term, future development of industrial land uses is presented on the Future Land Use Plan map. Future, long-term development of light industrial growth was distributed on the future land use map by the following Urban Land Institute analysis, presented here as recommendations for planning industrial development.

Recommendations -- Industrial Development

Goal. **Provide opportunities and guidelines for the development of light industrial land uses on appropriate sites in compatible locations relative to neighboring residential land uses and the natural environment.**

Implement appropriate industrial park site selection criteria, incorporating the goals and recommendations for achieving site-specific urban design based on the natural amenities of the environment.

- Use the site plan review process to ensure that industrial developments allow the preservation of stream corridors (includes drainage channel, stream banks and flood plain areas) as open space areas in industrial park cluster developments;

- Where possible encourage clustered development to allow for the preservation of scenic ridge lines and topographic high points as open space in developments; and

- Orient and align buildings and developments with a sensitivity to the existing watershed land forms, i.e., cluster development along or within ridge lines, high points, upland meadow and woodland areas, hill slopes and lowland meadow and woodland areas.

Follow normally accepted site selection criteria for evaluating proposed industrial developments, including the following considerations:

- Evaluate proposed sites for appropriate access by an existing or proposed interchange of the interstate freeway, an expressway and/or area primary arterial road;

- Evaluate proposed sites based upon direction and type of industrial growth near the area thoroughfare system;

- Ascertain both community attitudes toward industry and economic pressures in the area; and

- Estimate the amount of land required through a study of local absorption rates for a five-year period (acres absorbed per year by type of industry typical to industrial parks, and number of transactions).

IMPLEMENTATION

To implement the Shoal Creek Valley Area Plan, critical decisions about future public improvements must be made in a coordinated manner, using the area plan and plans of neighboring areas. The Major Street Plan must be consulted. Plans of other departments and agencies, such as the newly adopted Hodge Park Master Plan and the Capital Improvements Program, serve as guides to development review. The area plan discusses implementation in the context of near-term development to the year 2020.

Implementation of the Shoal Creek Valley Area Plan will proceed as the City coordinates provision of services with private developers and new housing in the area is built. The plan projects residential development to extend from the

southeast and southwest along the East Fork Shoal Creek and Little Shoal Creek basins.

Office and retail commercial and other non-residential growth is projected to occur only after extensive residential growth proceeds to extend through the Shoal Creek Valley. Near-term commercial development will be slow because the area is projected to grow from 1,200 people in 1990 to 12,400 people in 2020. As non-residential growth follows new residential construction, the City should anticipate commercial office and retail growth in the key thoroughfare corridors of the Shoal Creek Valley area.

Recommendations

Based upon the findings and planning principles presented in the area plan, the following recommendations will lead to effective plan implementation in the near-term:

Future Land Use and Growth Patterns.

1. Continue applying land use and utility policies so that new housing developments are close-in to existing services, which in turn promotes cost-effective growth from existing utility mains, rather than dispersed in the Shoal Creek Valley area. Development should be encouraged:

    - adjacent to existing development with utilities constructed to City standards;
    - where land is served by existing interceptor sewers;
    - within 3,000 feet of an existing adequately sized water main;
    - outside flood plains; and
    - away from steep slopes.

2. Implement the recommendations of the area plan to ensure that near-term, low-density development does not foreclose long-term, higher-density development, by amending the subdivision

regulations and applying the regulations to subdivision of land into parcels of 20 acres or smaller.

3. Continue coordination with the Water and Pollution Control Department to ensure extension of sanitary sewer and water feeder mains in a fiscally responsible manner, avoiding construction of public utilities prior to private development initiative and financing.

4. Create a strong visual character and area identity within the Shoal Creek Valley area by implementing the recommendations of the area plan for achieving effective urban and environmental design.

Major Street Plan.

1. Ensure during the plat review process that adequate rights-of-way are dedicated to implement the adopted Major Street Plan, and to link major and minor arterials with needed collector streets which are not currently indicated on the Major Street Plan.

2. Develop concept design guidelines *prior* to planning alternative future parkway alignments to address the recommendations of the area plan relating to the parkway function, urban design parameters, and related parkway development concerns.

Commercial and Industrial Corridor Areas.

Extensive commercial and industrial development is not projected in the near-term period of the plan. In the long-term land use scenario the future non-residential growth in the plan area is identified as clustered along the regional freeway and expressway systems which are already in place. Future residential development will spur non-residential development as the tangential and parallel arterial roads are improved to urban standards.

Sensitive roadway area planning can become critical to the potential development of the corridor properties, and to the region as a whole. A major roadway corridor, perhaps more than any other feature of the urban

environment, shapes our perceptions of the community. Urban planning practices are embracing more and more principles of landscape architecture for new and effective treatments of thoroughfare linkages. In the long-term planning for development along these key freeway corridors, the following recommendations are made:

1. The City should envision potential corridor development along I-435 and the parallel arterials and plan for creative responses to private market initiative and development, implementing the urban design recommendations in this plan and avoiding traffic designs that create following undesirable results:

    - long stretches of intensive development;
    - poorly marked and inadequately spaced driveways;
    - inadequate turning lanes;
    - haphazard on-site circulation facilities; and
    - visual clutter because of inappropriate number, size and location of signs within the corridor.

2. Address the relationship between roadside development patterns and the efficient and safe movement of traffic along the key corridors by establishing basic zoning mechanisms to implement the parkway design recommendations:

    - zoning overlay district regulations that create site development standards to promote desired land use patterns within the sphere of the corridor;

    - design elements of site plan review which promote unified development, for example, on at least ten-acre tracts;

    - site plan review which incorporates a strong emphasis on coordinated design and landscaping through the complete design process, from signage to traffic circulation;

- traffic impact analyses for large, non-residential developments to assess the sensitive balance between capacity and increases in traffic volumes along heavily travelled corridors;

- for projects that will have an adverse effect on off-site traffic patterns, mitigation plans that include necessary improvements, cost estimates, and proposed cost-participation between the public and private sectors; and

- plans for access control--full-control access, partial-control access, and regulations for driveways and approaches.

3. The City Planning and Development Department should continue to review and amend of the adopted Major Street Plan to create workable thoroughfare networks linking to the I-435 corridor where future, long-term retail and office commercial developments will cluster:

   - plan for long-term construction of boulevards and parkways parallel to I-435 to support future development of business uses in the thoroughfare corridors, because the freeway is built for restricted access movement of regional traffic, not local traffic; and

   - consider upgrading North Topping Road to a boulevard to enhance its capacity and utility to serve as a parallel arterial with I-435 in the development of future retail and office uses.

Boulevards, Parks and Recreation.

1. The City Planning and Development Department should continue working with the Board of Parks and Recreation Commissioners to review and amend the Plan for Parks, Boulevards and Parkways every ten years to ensure coordination with the area plan in future updates of the "Service Areas R, S and Q" of the park plan.

2. In the process of subdivision plat review secure dedication of land to create linkages from Hodge Park to:

   - make active recreation facilities accessible to neighboring residential areas; and

   - improve linear park lands through the neighboring areas.

3. The City should coordinate with the Missouri Highway Commission to design pedestrian access beneath M-152 Highway to link development from the south to Hodge Park.

4. The City Planning and Development Department and Board of Parks and Recreation Commissioners should establish guidelines for future urban development along the planned alignments of the future Shoal Creek and Maplewoods Parkways to respond appropriately to impacts on surrounding land uses and traffic patterns, and for enhancing the driving experience.

5. In site plan review of proposed commercial and industrial developments, implement the recommendations of the area plan for enhanced design details at significant intersections i.e., at major creek crossings and where Shoal Creek Parkway is planned to intersects Maplewoods Parkway.

6. The City Planning and Development Department should use the site plan review process to ensure that adequate park land is dedicated during development (or money in lieu of land is paid) for future area parks in keeping with the park plan.

Projected Public Improvement Priorities

Public Utilities.

1. The City Planning and Development Department should continue coordinating public land use policy with the Water and Pollution Control Department to ensure that the area plan goals and

recommendations for needed water mains and trunk bond sewers are met.

2. The City should anticipate undertaking the following improvements of the utility system during the near-term, or next thirty years:

   - extend sanitary sewer mains north of Pleasant Valley Road in the East Fork Shoal Creek basin;
   - extend sewer mains north of M-152 Highway in the Little Shoal Creek basin; and
   - continue extension of water feeder mains north of M-152 Highway west and east of I-435, and north along Flintlock Road.

3. In the northeast portion of the study area, the following capital improvements of the utility system are projected to be needed and requested by developers in the near-term:

   - construct a 12" water line along NE 112th Street; and
   - extend additional water mains in the Fishing River basin.

   If growth progresses in a more incremental pattern, extending into the center of the study area, then additional water lines along NE 108th Street and Reinking Road will also be needed and requested by developers in the near-term.

Street System

To serve transportation needs in the emerging Shoal Creek Valley urban areas, the following major street system improvements are anticipated in the next thirty years, under the conservative assumptions about the extent of growth developed by the plan within the low-to-moderate-density residential development scenario:

PRIMARY ARTERIALS

STREET	FROM	TO
N.E. 96th St.	Shoal Creek Pkwy.	M-291
N.E. Barry Rd.	N. Topping	Shoal Creek Pkwy.
N. Indiana	Study Area Boundary	Shoal Creek Pkwy.
Maplewoods Pkwy.	West Study Area Boundary	Shoal Creek Pkwy.
N.E. Pleasant Valley Rd.	N. Brighton Boundary	East Study Area
Shoal Creek Pkwy.	N. Indiana (N. Mersington)	Maplewoods Pkwy.

If development occurs in the more incremental, dispersed pattern considered by the plan, then additional primary arterials will experience pressure for improvement, such as NE 108th Street, Reinking Road, and North Eastern Road.

SECONDARY ARTERIALS

STREET	FROM	TO
N.E. 76th St.	N. Brighton	Eastern City Limits
N.W. 96th St.	Maplewoods Pkwy.	Shoal Creek Pkwy.
N.E. 104th St.	M-291	Eastern City Limits
N.E. 112th St.	M-291	Eastern City Limits
N. Brighton Ave.	M-152	Shoal Creek Pkwy.
N. Flintlock Rd.	N.E. 76th St.	M-291
N. Home Ave.	N.E. 104th St.	Northern City Limits
N. Mersington	I-435(North)	Northern City Limits
N. Stark Ave.	M-291	Northern City Limits

To serve thoroughfare roadway needs in the near-term, the City should plan for collector streets to link the following secondary arterial roadways:

- Shoal Creek Parkway and Flintlock Road;
- M-152 Highway and NE 76th Street;
- Brighton Ave. and NE 76th Street;
- NE 76th Street and New Barry Road; and
- NE 104th and NE 112th Streets.

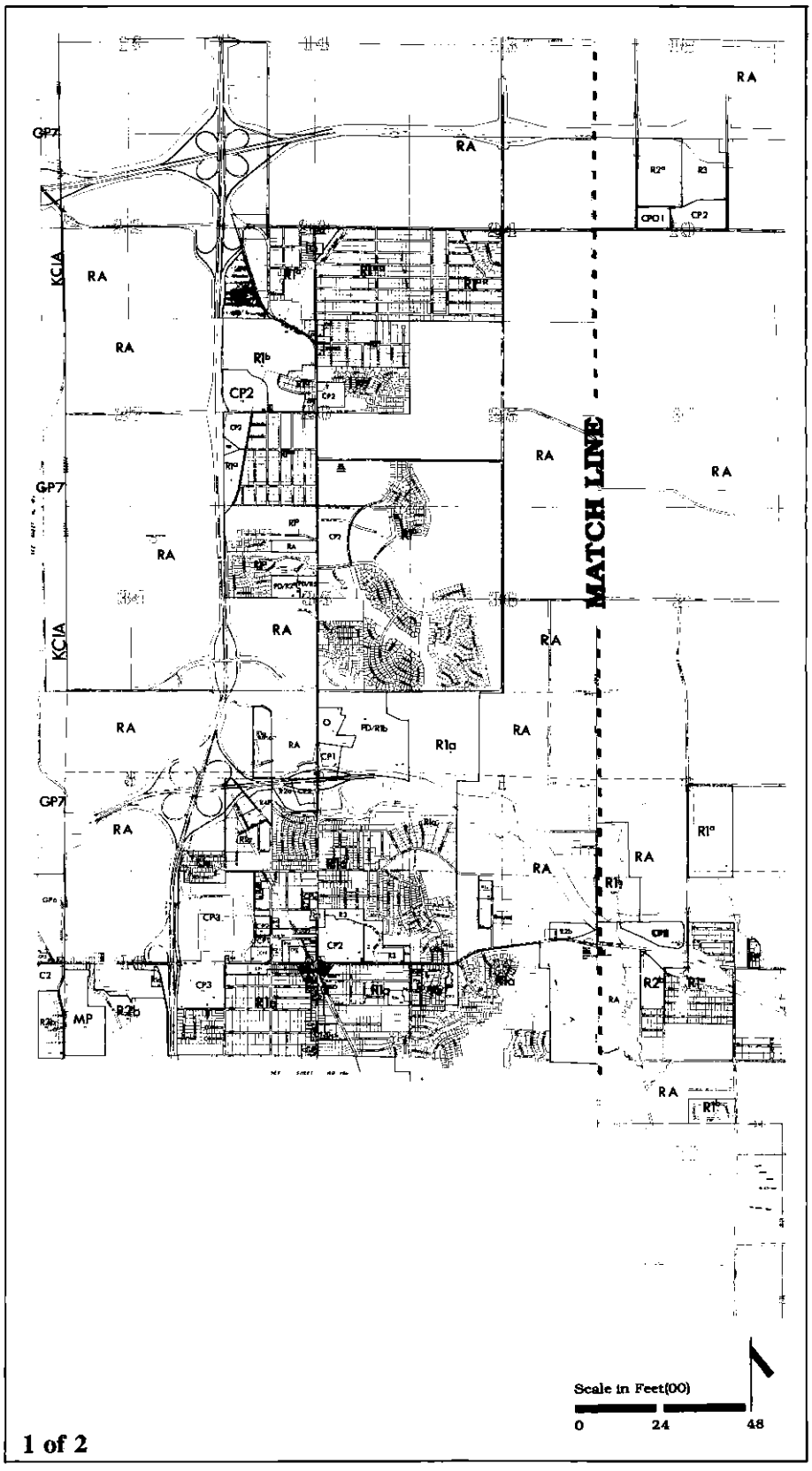
These collector streets are particularly important in making connections within the traffic circulation system. The City should work closely with developers as the collector streets are aligned and designed so that they will incorporate the design amenities and planning principles presented in the area plan. Such planning guidelines will result in productive uses of the critical freeway and parkway/boulevard thoroughfares in the heart of the Shoal Creek Valley area.

APPENDIX

EXISTING ZONING DISTRICTS

WESTERN PORTION

Figure 10



1 of 2

ZONING DISTRICTS

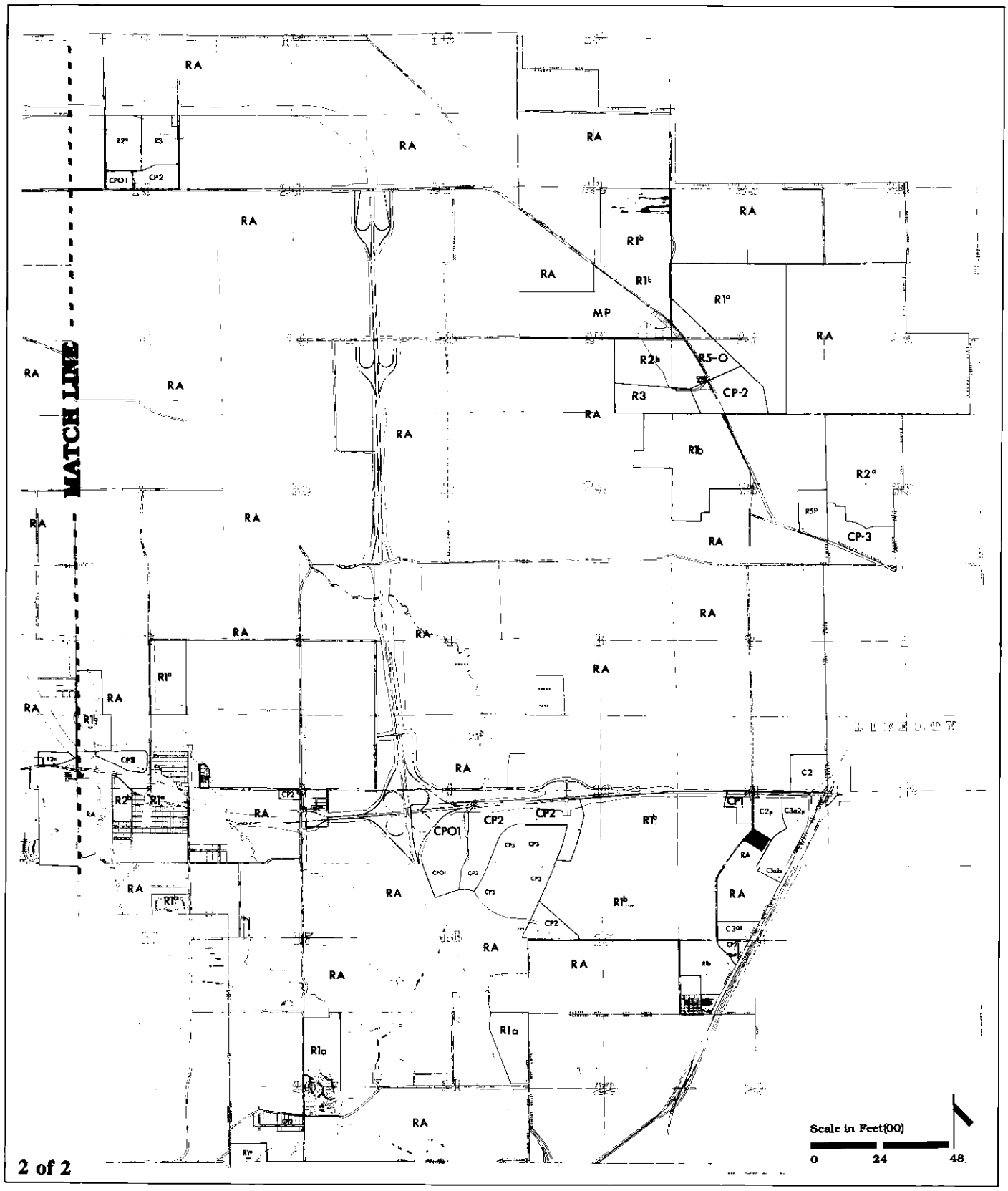
Legend

District R-1aa	-	One-family dwelling (low density)
District R-1a	-	One-family dwelling (medium density)
District R-1b	-	One-family dwelling
District R-A	-	Agricultural
District R-2a	-	Two-family dwelling (low density)
District R-2b	-	Two-family dwelling
District R-3	-	Low apartments, (low density)
District R-4	-	Low apartment
District R-4-O	-	Low apartment, administrative office building
District R-5	-	High apartment
District R-5-O	-	High apartment, administrative office building
District R-6	-	High apartments - provisional
Zone RP	-	Automobile parking zone
Zone RPT	-	Temporary automobile parking zone
District CP-1	-	Neighborhood planned business centers
District CP-2	-	Local planned business centers
District CP-3	-	Regional planned business centers
District CPO-1	-	Administrative, professional and research (high buildings)
District CPO-2	-	Administrative, professional and research
District C-1	-	Neighborhood retail business
District C-2	-	Local retail business
District C-3a1	-	Intermediate business (low buildings)
District C-3a2	-	Intermediate business (high buildings)
District C-3b	-	Intermediate business transitional
District C-X	-	
District C-4	-	Central business
District CPR	-	Planned redevelopment
District M-P	-	Planned industrial
District M-1	-	Light industrial
District M-2a	-	Heavy industrial
District M-2b	-	Heavy industrial (non-residential)
District M-3	-	Heavy industrial (residual uses)
District GP	-	General planned development
District PD	-	Planned development overlay

EXISTING ZONING DISTRICTS

EASTERN PORTION

Figure 11



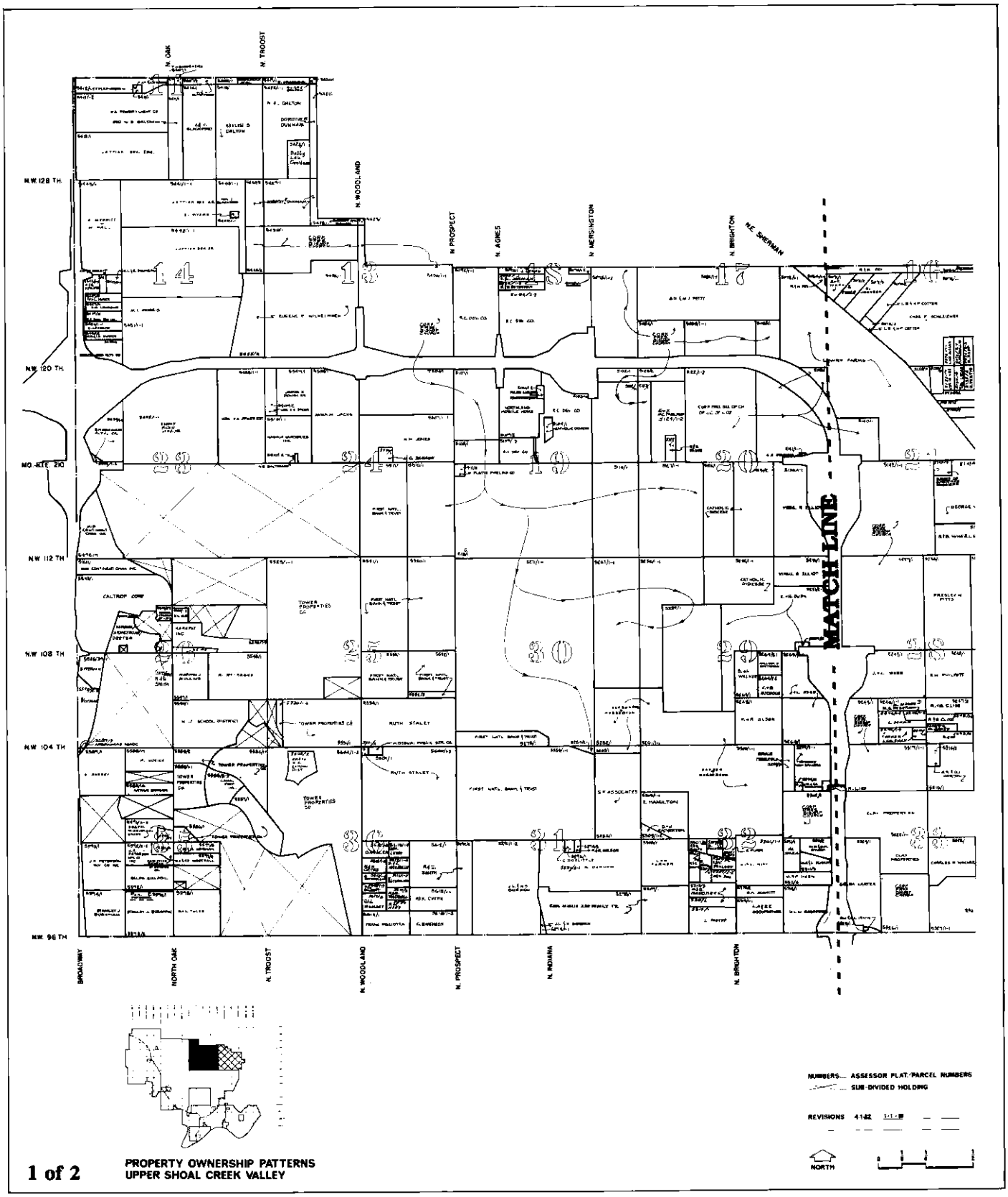
SHOAL CREEK VALLEY AREA PLAN

City of Kansas City, Missouri

EXISTING OWNERSHIP OF PARCELS

UPPER VALLEY - WESTERN PORTION

Figure 12

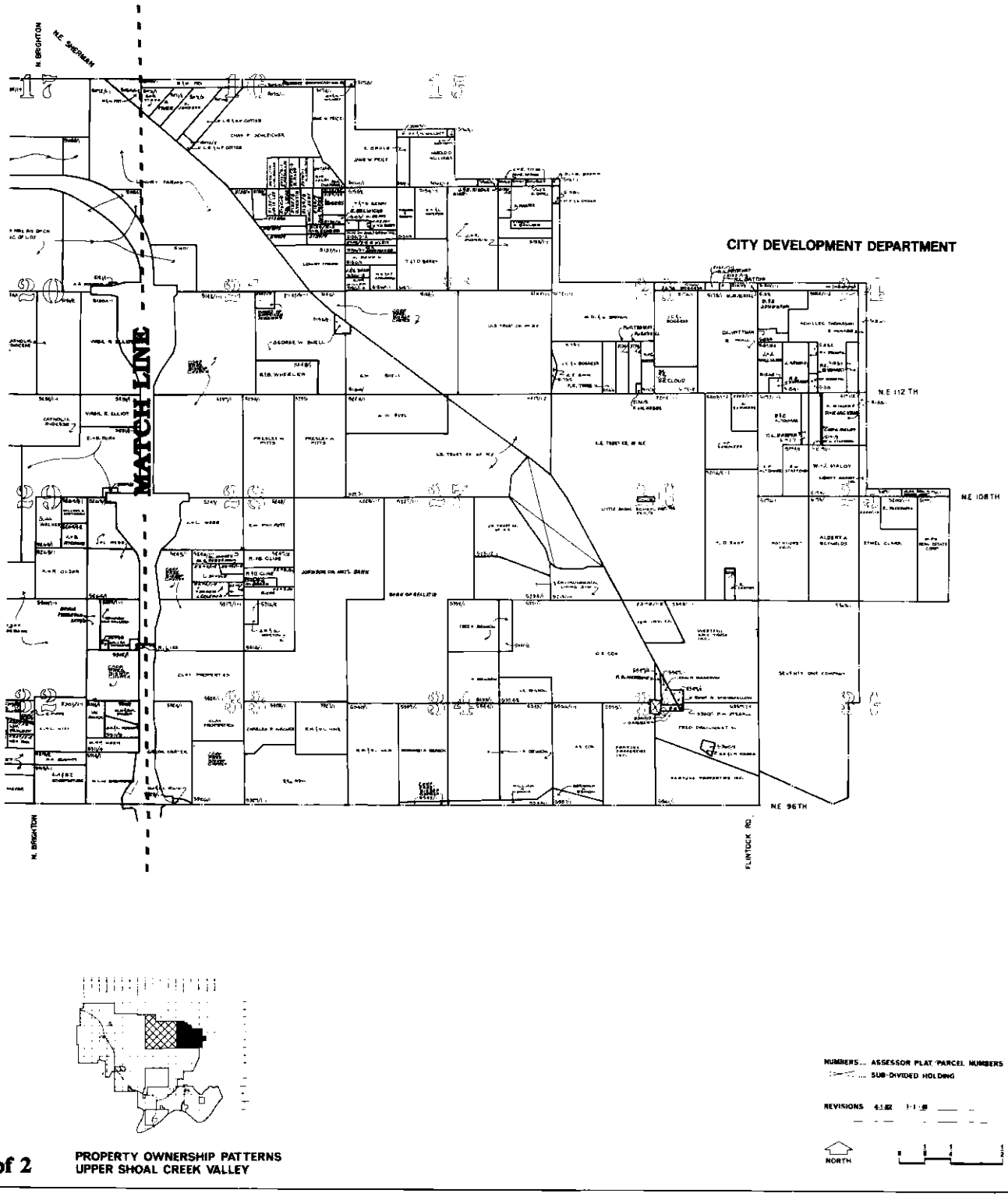


1 of 2 PROPERTY OWNERSHIP PATTERNS
UPPER SHOAL CREEK VALLEY

EXISTING OWNERSHIP OF PARCELS

UPPER VALLEY - EASTERN PORTION

Figure 13

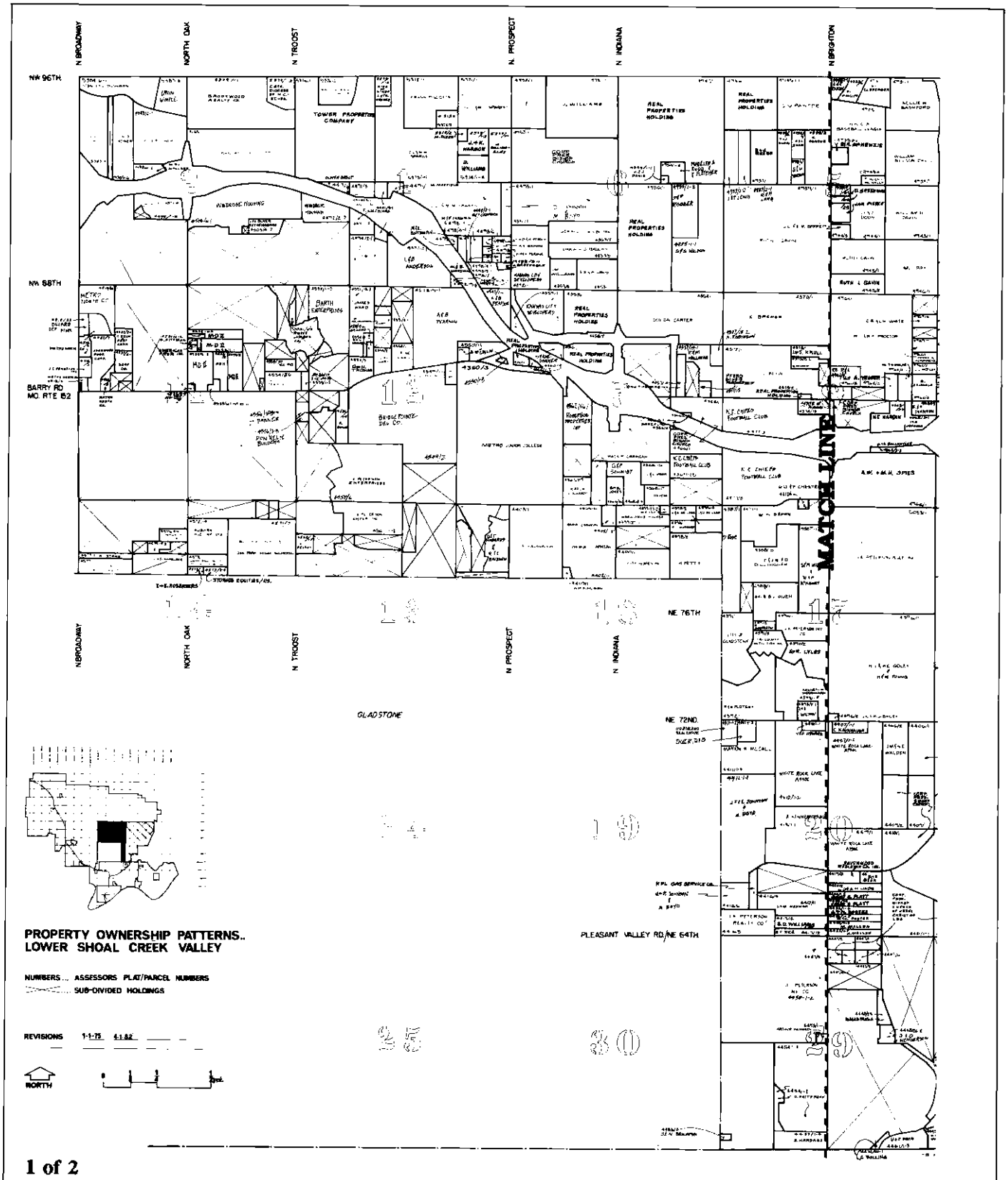


2 of 2 PROPERTY OWNERSHIP PATTERNS
UPPER SHOAL CREEK VALLEY

EXISTING OWNERSHIP OF PARCELS

LOWER VALLEY - WESTERN PORTION

Figure 14

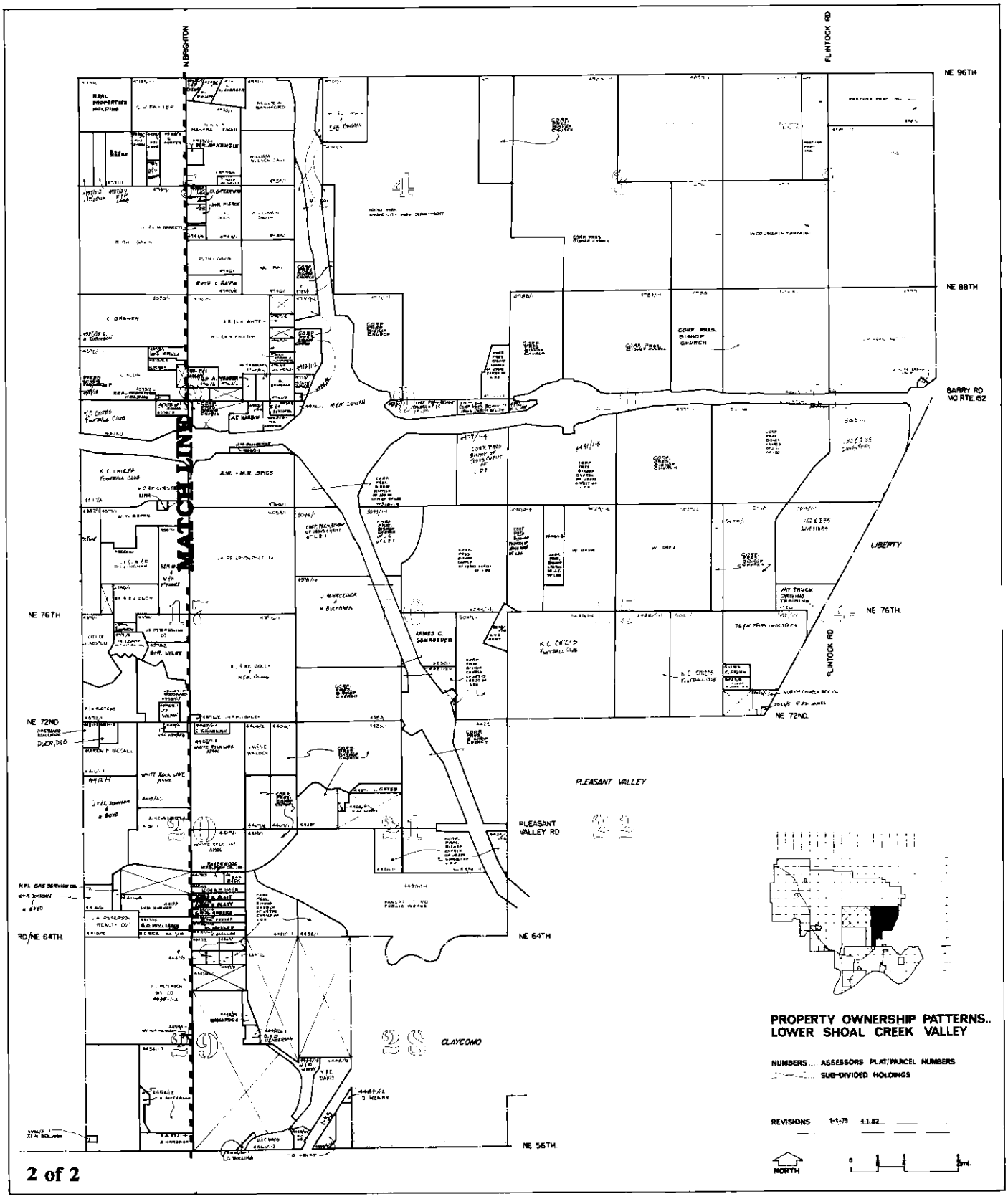


1 of 2

EXISTING OWNERSHIP OF PARCELS

LOWER VALLEY - EASTERN PORTION

Figure 15



PAST DEVELOPMENT PROPOSALS IN THE STUDY AREA

Shoal Creek Valley Development Proposal
1962 to February 1991

S. E. Region South of 152 and East of I-435

Case #	Project Name	Date	Acres	Mh-S.F. Units		MF Units	Hotel Rooms	Retail (S.F.)	Office (S.F.)	Indust. (S.F.)
6609	Shoal Creek Reg. Shopping Center	6-73	150					1,558	357	
6780	Shoal Creek Mall Revisions	3-74	161					1,000	500	
6862	Commercial Project	9-74	20					120		
6863	Office Park with commercial	9-74	179					448	800	
6864	Commercial Project	9-74	16					146		
6865	Commercial Project	9-74	33					231		
6866	Shoal Creek Res. Area	9-74	634	439	2,562					
8601	North Church Estates	10-88	6	22						
9257	North Church Estates	2-84	12	59						
9851	Barry Pointe	7-89	86					282	399	320
10798	Psychiatric Hospital	2-90	8							
10234	Highridge Manor	8-88	59	201						
TOTAL										

Shoal Creek Valley Development Proposal
1962 to February 1991

S. W. Region

Case #	Project Name	Date	Acres	Mh-S.F. Units		MF Units	Hotel Rooms	Retail (S.F.)	Office (S.F.)	Indust. (S.F.)
6804	Private Club	7-72	13					1		
8793	White Rocks	1-84	55		56	564				
8799										
TOTAL										

Shoal Creek Valley Development Proposal
1962 to February 1991

West Central Region North of 152, West of I-435

Case #	Project Name	Date	Acres	Mh-S.F. Units	MF Units	Hotel Rooms	Retail (S.F.)	Office (S.F.)	Indust. (S.F.)
6471	Homart Regional Shopping Center (partial)	?-72	179				1,000		
6472	Apartment Project w/Homart Center	?-72	42	150/312					
7427	Sporting Goods	3-77	2				4		
8373	Mid-Continent	2-81	6				9	9	2
TOTAL									

Shoal Creek Valley Development Proposal
1962 to February 1991

N. E. Region along M-291

Case #	Project Name	Date	Acres	Mh-S.F. Units	MF Units	Hotel Rooms	Retail (S.F.)	Office (S.F.)	Indust. (S.F.)
5983	Brynwood Down	6-70	95	562					
6080									
6093	Pioneer Investment	2-71	192						
6117	Pioneer Village	4-71	77				1,200		
6158	Place Liberte Com.	8-71 1-80	190			262	954	526	
6159	Place Liberte Res.	8-71 1-80	367	516/1,434					
6506									
9648	Northland Institute	10-85	36	Mental Care					
TOTAL									

Shoal Creek Valley Development Proposal
1962 to February 1991

N. W. Region along I-435

Case #	Project Name	Date	Acres	Mh-S.F. Units	MF Units	Hotel Rooms	Retail (S.F.)	Office (S.F.)	Indust. (S.F.)
6016	Northland Mobile Home	1-72	137	531					
6116	Motel and Commercial Project	5-72	15			200	125		
6354	Residential Project	?-72	51	140	240				
6523	Mo. Pub. Serv. Elec. Substation - 2 ac.								
TOTAL									